STEREO AMPLIFIER

A-93

SERVICE MANUAL

KENWOOD

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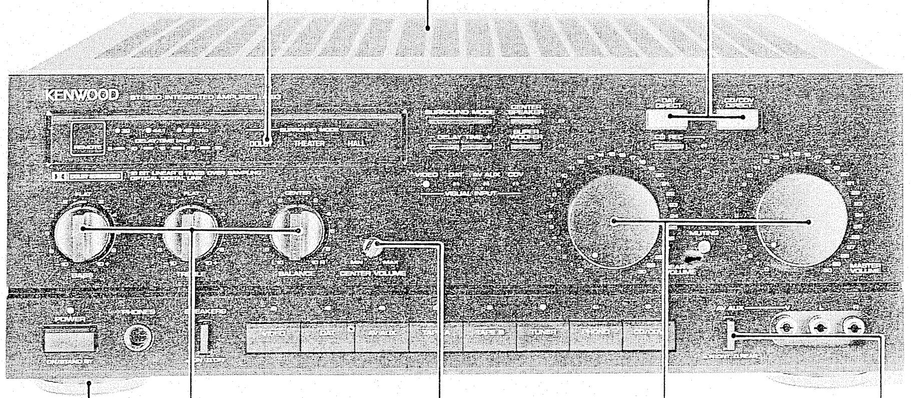
B51-3929-00(B)1762



Front glass (B10-1034-03)

Metallic cabinet (A01-1810-01)

Knob (K29-3742-04) ×2

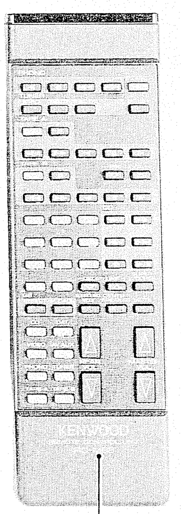
Foot (J02-1040-05) ×2

Knob (K29-3759-04) ×3

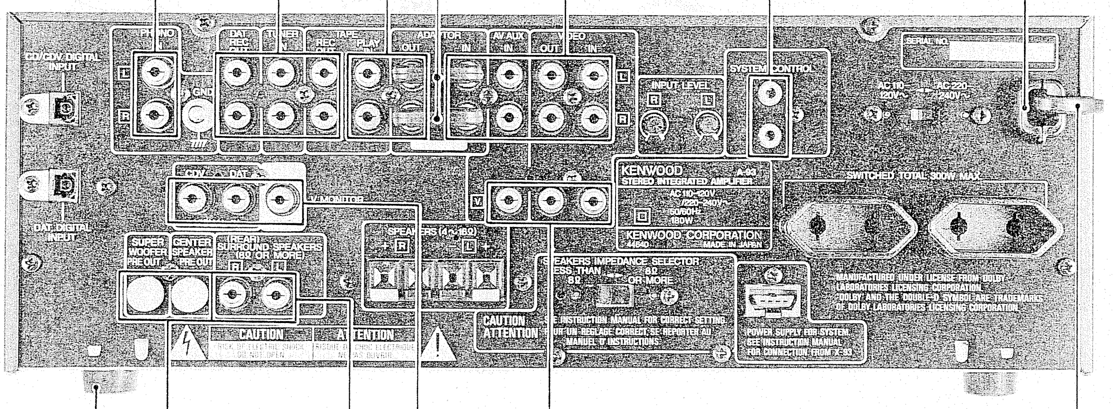
Knob (K29-3741-04)

Knob (MASTER, REAR) (K29-3739-04) ×2

Knob (AV AUX) (K27-1915-04)



Remote controller ass'y (A70-0299-05)



Phono jack (2P) (E13-0235-05)

Phono jack (6P) (E13-0621-05)

Phono jack (4P) (E13-0446-05)

PIN (J12-0091-05)

Phono jack (8P) (E13-0820-05)

Miniature phone jack (E11-0188-05)

Power cord bushing (J42-0083-05)

Phono jack (2P) (E13-0255-05)

Phono jack (8P) (E13-0309-05)

AC power cord* (E30-)

Foot (J02-0366-15) ×2

Phono jack (2P) (E13-0254-05)

Phono jack (3P) (E13-0313-05)

* Refer to parts list on page 47.

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SCHEMATIC DIAGRAM ....
EXPLODED DIAGRAM ....
PARTS LIST ....
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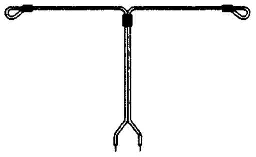
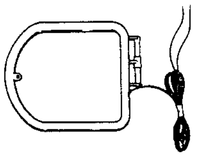
ACCESSORIES

After unpacking the product carton, first check that all of the following components are present (they are packed togethe with the amplifier and tuner). For future transport in case of servicing, etc., be sure to retain the carton and other pack ing materials.

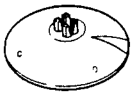
T-type (FM) feeder antenna × 1
(T90-0132-05)



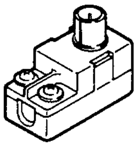
Loop antenna × 1
(T90-0153-05)



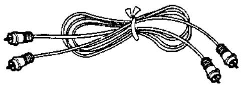
Antenna stand × 1
(J19-2815-04)



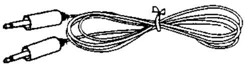
Antenna adaptor (75 Ω/300 Ω
(T-93L only) × 1
(T90-0136-05)



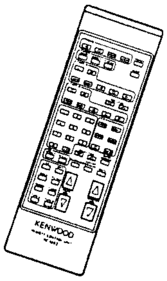
Audio cord
(with RCA plugs) × 3
(E30-0615-05)



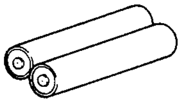
System control cord × 2
(E30-1392-05)



Remote control unit × 1
(A70-0299-05)



Battery (SUM-3, "AA" or "R6") × 2

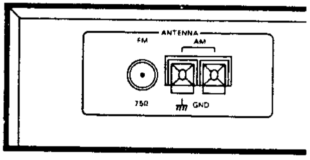


CONNECTIONS

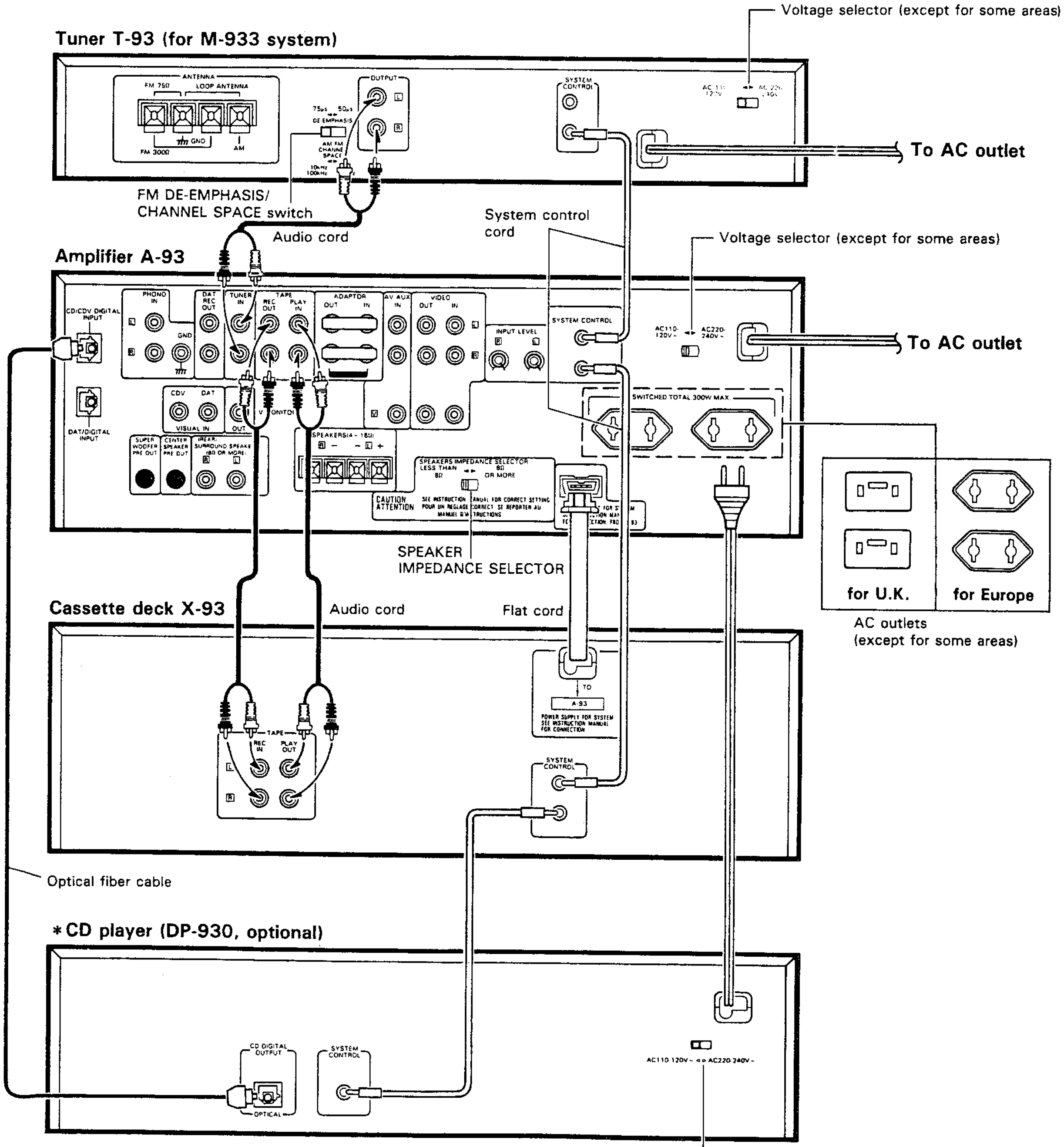
Basic system connections

Make connection as shown below. When connecting the related system components, refer also to the instruction manuals of the related components.
Do not plug in the power lead until all connections are complete.

T-93L (for M-93 system)



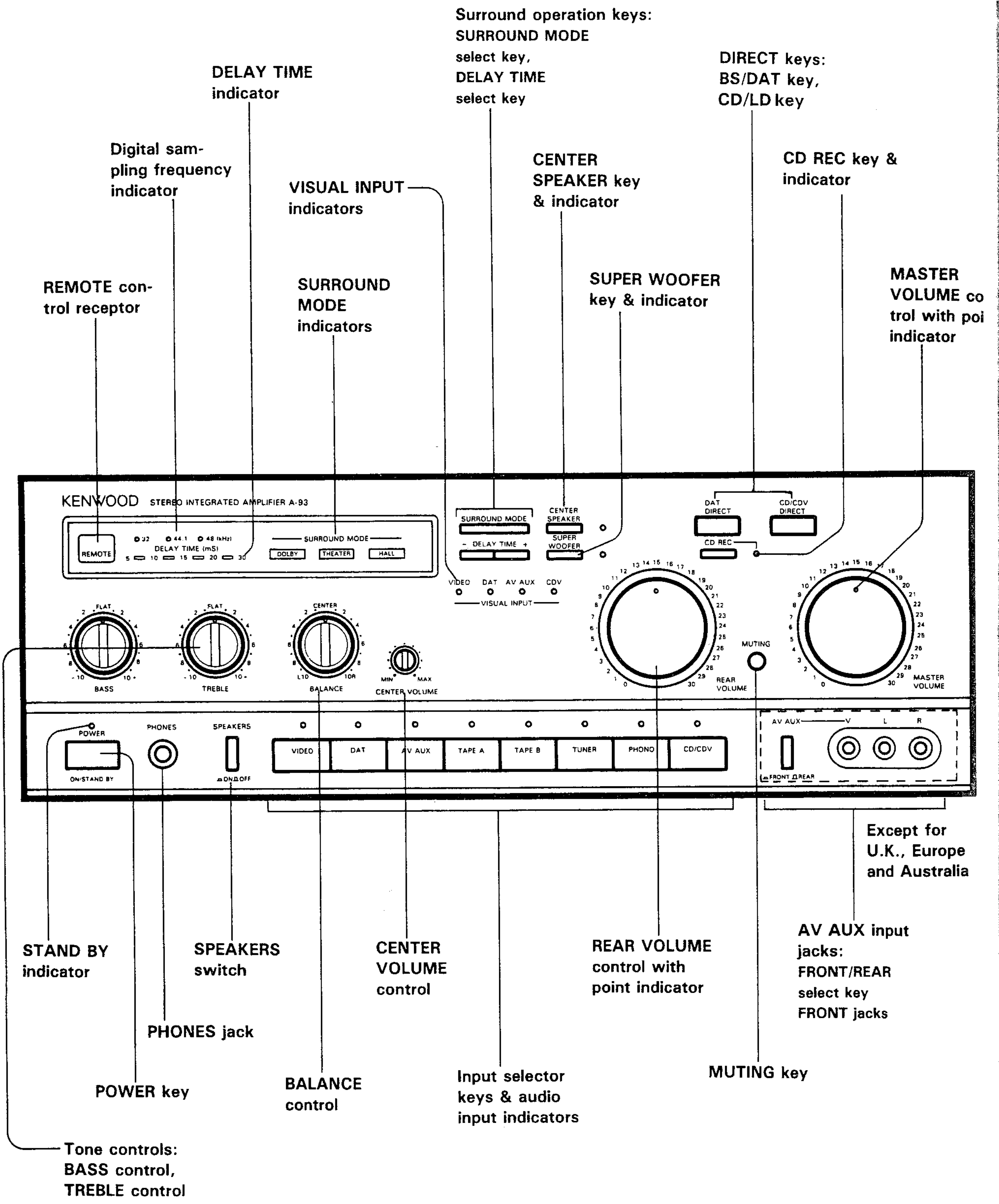
ANTENNA
FM
AM
75Ω
GND



Voltage selector (except for some areas)
Tuner T-93 (for M-933 system)
ANTENNA
FM 75Ω
LOOP ANTENNA
FM 300Ω
GND
AM
OUTPUT
L
R
75μs 50μs
DE-EMPHASIS
AM FM CHANNEL SPACE
10kHz 100kHz
SYSTEM CONTROL
To AC outlet
FM DE-EMPHASIS/
CHANNEL SPACE switch
Audio cord
System control cord
Voltage selector (except for some areas)
Amplifier A-93
CD/CDV DIGITAL INPUT
PHONO IN
GND
DAT REC OUT
TUNER IN
TAPE REC OUT PLAY IN
ADAPTOR OUT IN
AV AUX IN
VIDEO OUT IN
INPUT LEVEL
SYSTEM CONTROL
AC110-120V~ AC220-240V~
To AC outlet
SWITCHED TOTAL 300W MAX.
DAT/DIGITAL INPUT
CDV DAT
VISUAL IN OUT
MONITOR
SUPER WOOFER PRE OUT
CENTER SPEAKER PRE OUT
REAR SURROUND SPEAKERS
SPEAKERS(4-16Ω)
SPEAKERS IMPEDANCE SELECTOR
LESS THAN 8Ω
8Ω OR MORE
CAUTION
ATTENTION
SPEAKER
IMPEDANCE SELECTOR
for U.K.
for Europe
AC outlets
(except for some areas)
Cassette deck X-93
Audio cord
Flat cord
TAPE
REC IN
PLAY OUT
L
R
TO
A-93
SYSTEM CONTROL
Optical fiber cable
*CD player (DP-930, optional)
CD DIGITAL OUTPUT
OPTICAL
SYSTEM CONTROL
AC110-120V~ AC220-240V~
Voltage selector
(except for some areas)

***IMPORTANT:**
This option may not be available in some areas. For details on options, consult your dealer.

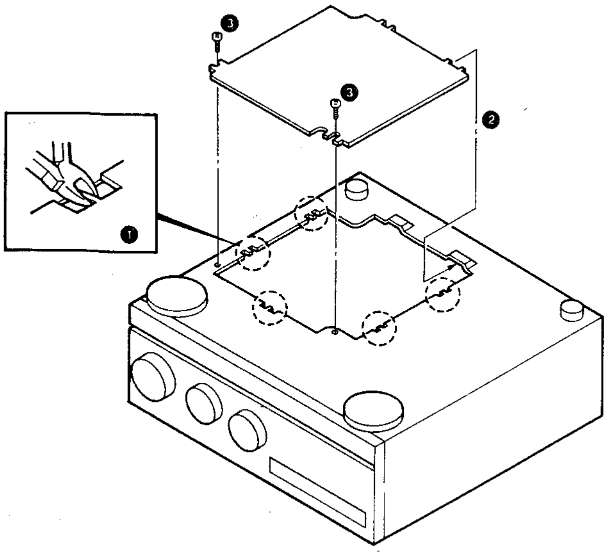
CONTROL AND INDICATORS


Surround operation keys:
SURROUND MODE
select key,
DELAY TIME
select key
DIRECT keys:
BS/DAT key,
CD/LD key
DELAY TIME
indicator
Digital sampling frequency
indicator
VISUAL INPUT
indicators
CENTER
SPEAKER key
& indicator
CD REC key &
indicator
REMOTE control receptor
SURROUND
MODE
indicators
SUPER WOOFER
key & indicator
MASTER
VOLUME co
trol with poi
indicator
KENWOOD
STEREO INTEGRATED AMPLIFIER A-93
REMOTE
32
44.1
48 (kHz)
DELAY TIME (mS)
5
10
15
20
30
SURROUND MODE
DOLBY
THEATER
HALL
SURROUND MODE
DELAY TIME
CENTER SPEAKER
SUPER WOOFER
DAT DIRECT
CD/CDV DIRECT
CD REC
VIDEO
DAT
AV AUX
CDV
VISUAL INPUT
FLAT
BASS
TREBLE
CENTER
BALANCE
MIN
MAX
CENTER VOLUME
MUTING
REAR VOLUME
MASTER VOLUME
POWER
ON/STAND BY
PHONES
SPEAKERS
ON OFF
VIDEO
DAT
AV AUX
TAPE A
TAPE B
TUNER
PHONO
CD/CDV
AV AUX
V
L
R
FRONT REAR
Except for
U.K., Europe
and Australia
STAND BY
indicator
SPEAKERS
switch
CENTER
VOLUME
control
REAR VOLUME
control with
point indicator
AV AUX input
jacks:
FRONT/REAR
select key
FRONT jacks
PHONES jack
POWER key
BALANCE
control
Input selector
keys & audio
input indicators
MUTING key
Tone controls:
BASS control,
TREBLE control

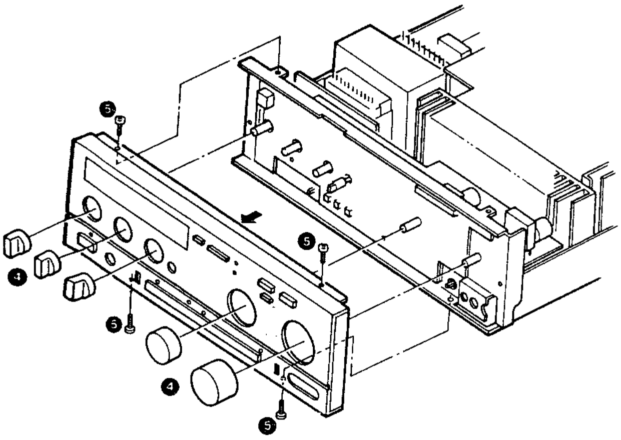
DISASSEMBLY FOR REPAIR

*Remove the case prior to the following operations.

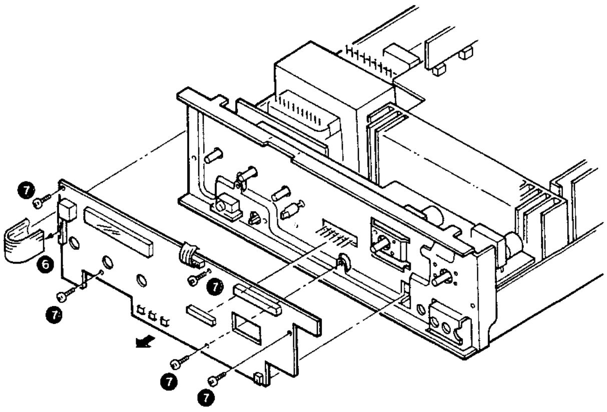
1. Cut the five catches ① of the bottom plate.
2. After repair, rotate the bottom plate 180° and set the convex as shown ②.
3. Set the two screws ③.



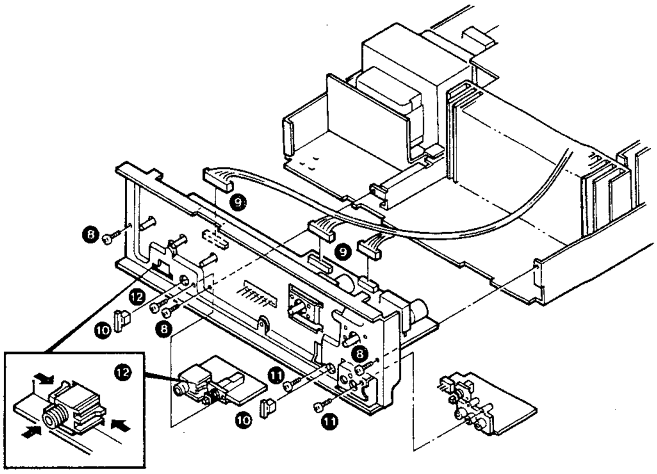
4. Detach the five knobs ④.
5. Remove the four screws ⑤ and detach the front panel.



6. Disconnect the flexible cord ⑥.
7. Remove the five screws ⑦ and disconnect the board.

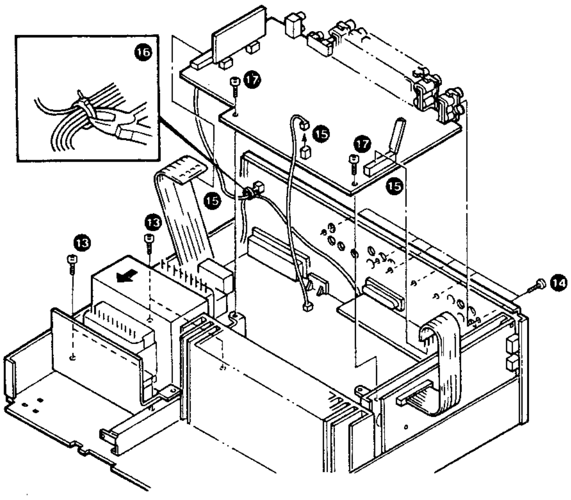


8. Remove the three screws ⑧.
9. Disconnect the three connectors ⑨ and detach the panel.
10. Detach the two knobs ⑩.
11. Remove the two screws ⑪ and disconnect the board.
12. Remove the one screw ⑫ and undo the catch of the PHONES jack, and disconnect the board.

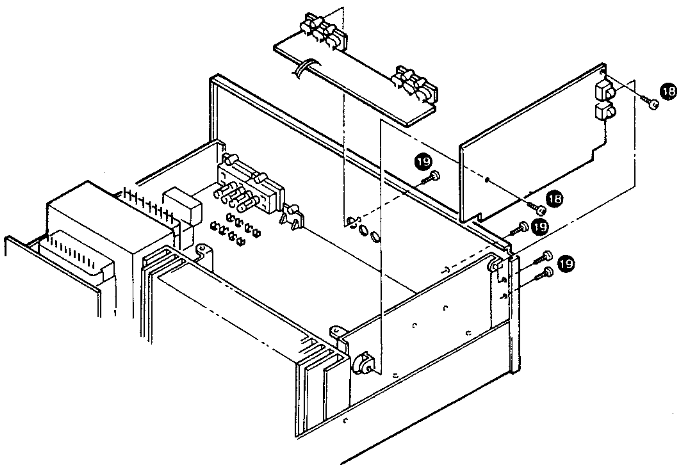


DISASSEMBLY FOR REPAIR

13. Remove the four screws ⑬ of the transformer and slide the transformer towards you.
14. Remove the six screws ⑭ of the rear panel.
15. Disconnect the three cords ⑮.
16. Cut the belt ⑯.
17. Remove the two screws ⑰ and disconnect the board.



18. Remove the two screws ⑱.
19. Remove the four screws ⑲ of the rear panel and disconnect the two boards.



20. Remove the eight screws ⑳ of the rear panel.
21. Remove the five screws ㉑ and disconnect the board.

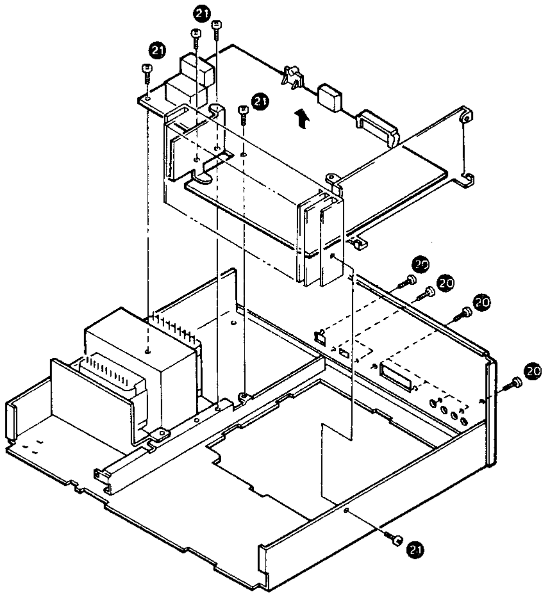
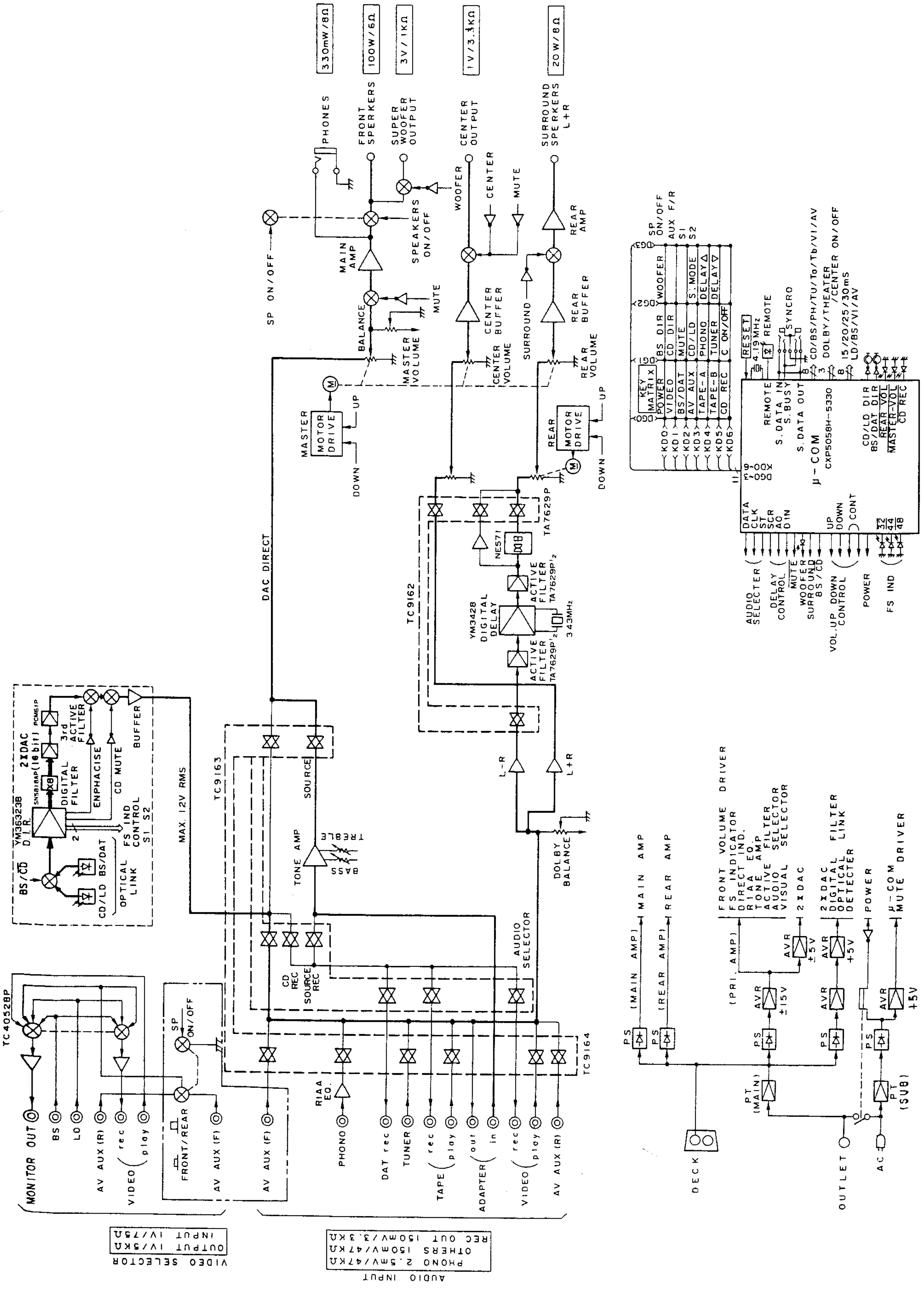


DIAGRAM BLOCK


330mW/8Ω
100W/6Ω
3V/1KΩ
1V/3.3KΩ
20W/8Ω
PHONES
FRONT SPERKERS
SUPER WOOFER OUTPUT
CENTER OUTPUT
SURROUND SPERKERS L+R
SP ON/OFF
MAIN AMP
SPEAKERS ON/OFF
WOOFER
CENTER
MUTE
REAR AMP
BALANCE
MASTER VOLUME
CENTER BUFFER
CENTER VOLUME
SURROUND
REAR BUFFER
REAR VOLUME
MASTER MOTOR DRIVE
REAR MOTOR DRIVE
UP
DOWN
DAC DIRECT
TC9162
TA7629P
NE571
ACTIVE FILTER
TA7629P½
YM3428 DIGITAL DELAY
3.43MHz
L-R
L+R
DOLBY BALANCE
TC9163
SOURCE
TONE AMP
TREBLE
BASS
AUDIO SELECTOR
CD REC
SOURCE REC
TC9164
RIAA EQ.
BS/CD
YM3623B D.I.R.
SM5818AP(16bit)
2XDAC
PCM61P
X8
DIGITAL FILTER
3rd ACTIVE FILTER
ENPHACISE
CD MUTE
BUFFER
FS IND CONTROL S1 S2
OPTICAL LINK
CD/LD
BS/DAT
MAX. 12V RMS
TC4052BP
SP ON/OFF
FRONT/REAR
MONITOR OUT
BS
LD
AV AUX (R)
VIDEO rec play
AV AUX (F)
PHONO
DAT rec
TUNER
TAPE rec play
ADAPTER out in
VIDEO rec play
AV AUX (R)
VIDEO SELECTOR
OUTPUT 1V/5KΩ
INPUT 1V/75Ω
AUDIO INPUT
PHONO 2.5mV/47KΩ
OTHERS 150mV/47KΩ
REC OUT 150mV/3.3KΩ
KEY MATRIX
KD0–KD6
DG0–DG3
POWER
VIDEO
BS/DAT
AV AUX
TAPE-A
TAPE-B
CD REC
BS DIR
CD DIR
MUTE
CD/LD
PHONO
TUNER
C ON/OFF
WOOFER
S.MODE
DELAY△
DELAY▽
SP ON/OFF
AUX F/R
S1
S2
RESET
4.19MHz
REMOTE
SYNCRO
μ-COM CXP5058H-5330
REMOTE
S.DATA IN
S.BUSY
S.DATA OUT
KD0-6
DG0-3
CD/BS/PH/TU/Ta/Tb/VI/AV
DOLBY/THEATER/CENTER ON/OFF
15/20/25/30mS
LD/BS/VI/AV
CD/LD DIR
BS/DAT DIR
REAR VOL
MASTER VOL
CD REC
DATA
CLK
ST
SCR
A0
DIN
UP
DOWN
CONT
AUDIO SELECTER
DELAY CONTROL
MUTE
WOOFER
SURROUND
BS/CD
VOL.UP.DOWN CONTROL
POWER
FS IND
DECK
PS
PT (MAIN)
PT (SUB)
AVR
±15V
±5V
+5V
(MAIN AMP)
(REAR AMP)
(PRI. AMP)
MAIN AMP
REAR AMP
FRONT VOLUME DRIVER
FS INDICATOR
DIRECT IND.
RIAA EQ.
TONE AMP
ACTIVE FILTER
AUDIO SELECTOR
VISUAL SELECTOR
2XDAC
2XDAC
DIGITAL FILTER
OPTICAL LINK
DETECTER
POWER
μ-COM
MUTE DRIVER
OUTLET
AC

CIRCUIT DESCRIPTION

Component Functions:

Main amplifier unit (X07-2490-00)

Component	Component Name	Use/Function	Operation/Condition/Interchangeability
Q1~4	2SA992 (F, E)	Input differential amplifier	A differential amplifier is constituted of two pairs of transistors: Q1 and Q3 for left channel, and Q2 and Q4 for right channel.
Q5~8	2SC1845 (F, E)	Second-stage differential amplifier	A differential amplifier is constituted of two pairs of transistors: Q5 and Q7 for left channel, and Q6 and Q8 for right channel.
Q1, 10	2SC2590	Predriver	
Q11, 12	2SA1110		
Q13, 14	2SA992 (F, E)	Current mirror	
Q15, 16	2SC1845 (F, E)	Current limiter	Current limitation to final transistor at the time of overload drive
Q17, 18	2SC3855	Power transistors	Speaker drive
Q19, 20	2SA1491		
Q21, 22	2SC4137 (V, W)	Temperature compensation	Idling current control
Q23	2SA992 (F, E)	Power supply control	
Q24	2SC1740S (Q, R)	Power supply control	Power supply ON/OFF control Interchangeable transistor 2SC945A (Q, R)
Q25	2SC1740S (Q, R)	Power supply control	First class +15 V power control Interchangeable transistor 2SC945A (Q, R)
Q26	2SB941	AVR	Voltage control −15 V
Q27	2SA733 (A) (Q, P)	AVR	Error amplification Interchangeable transistor 2SA933S (Q, R)
Q28	2SC2003 (L, K)	Relay driver	On with POWER signal "H"
Q30	2SC2878 (B)	Muting	SW volume muting
Q31	2SA733 (A) (Q, P)	Muting driver	SW volume muting driver Interchangeable transistor 2SA933S (Q, R)
IC1	μPC7805HF	+5 V AVR	Microprocessor power backup
IC2	μPC7815HF	AVR	+15 V 3-terminal regulator
IC3	μPC7805HF	AVR	DAC +5,6 V power supply
IC5, 6	μPC1238V*1	Rear amplifier	Rear monolithic power amplifier

EQ filter unit (X08-2310-00)

Component	Component Name	Use/Function	Operation/Condition/Interchangeability
IC1	TC9163N	Input selector	
IC2	TC9164N	Input selector	
IC4	TC9162N	Input selector	
IC5	NE571N	Compandor	Digital delay (compressor, expandor)
IC6	TA7629P	Dolby IC	Dolby B type 1-channel
IC7	NJM78L05A	3-terminal regulator	For 5V
IC8	μPC4570C-A	Operation amplifier (×2)	For phono and EQ
IC11	μPC4574C	Operation amplifier (×4)	Center output, SURROUND output, buffering
IC12	μPC4570C-A	Operation amplifier (×2)	Dolby SURROUND and THEATER/HALL buffering
IC13	TC4052BP	Input selector	For visual
IC14	MC14577A	Operation amplifier (×2)	For visual (6 dB amplified)
Q1	2SC945 (A) (Q, P)	Noise OSC	Noise OSC ON with its base "H" Interchangeable transistor 2SC1740S (Q, R)
Q2	2SC2003 (L, K)	5 V system regulation	For visual, positive power supply (+5 V)
Q3	2SA954 (L, K)	5 V system regulation	For visual, negative power supply (−5 V)

CIRCUIT DESCRIPTION

Control unit (X11-2730-00)

Component	Component Name	Use/Function	Operation/Condition/Interchangeability
IC1	CXP5058H-544Q	Microprocessor	Remote control signal reception Main transformer ON/OFF control AV T/O selector selection control and display F/R electrically driven VR control and muting ON/OFF
IC2	M51951ASL	Microprocessor reset	When power is plugged in, operates to hold the initial status. When the power switch is set to OFF, operates to memorizes the just previous status.
IC4, 5	BA6209N (LB1641)	Motor drive IC	Drives the motor by an "H" signal when increasing up or decreasing down the front's or rear's volume by the microprocessor from the remote control.
IC6	µPC4570C-A	Tone amplifier	L/R tone control amplifier
IC7	µPC4570C-A	Operation amplifier	Rear and center amplifier
Q1~4	2SC2878 (B)	Muting	Q1 and Q2 for front, Q3 for center, Q4 for rear volume muting
Q5~7	2SA733 (A) (Q, R)	Tr SW	For Speaker ON/OFF, FS1, FS2 Interchangeable transistor 2SA933S (Q, R)
Q8~9	SA937F (Q, R)	Muting driver	Volume muting control
Q10	2SA733 (A) (Q, P)	Muting driver	Volume muting control Interchangeable transistor 2SA933S (Q, R)
Q12, 13	2SC2320 (E, F)	Lamp driver	Direct display lamp lighting driver
Q14	2SD822 (Q, P)	Constant voltage	Motor VR voltage

Accessory unit (X13-6320-00)

Component	Component Name	Use/Function	Operation/Condition/Interchangeability
IC1	YM3428	Digital delay	Operates on 3.43 MHz. Controlled by microprocessor with DATA (pins A0 and SCI)
IC2	µPC4574C	Operation amplifier (×4)	For active filter

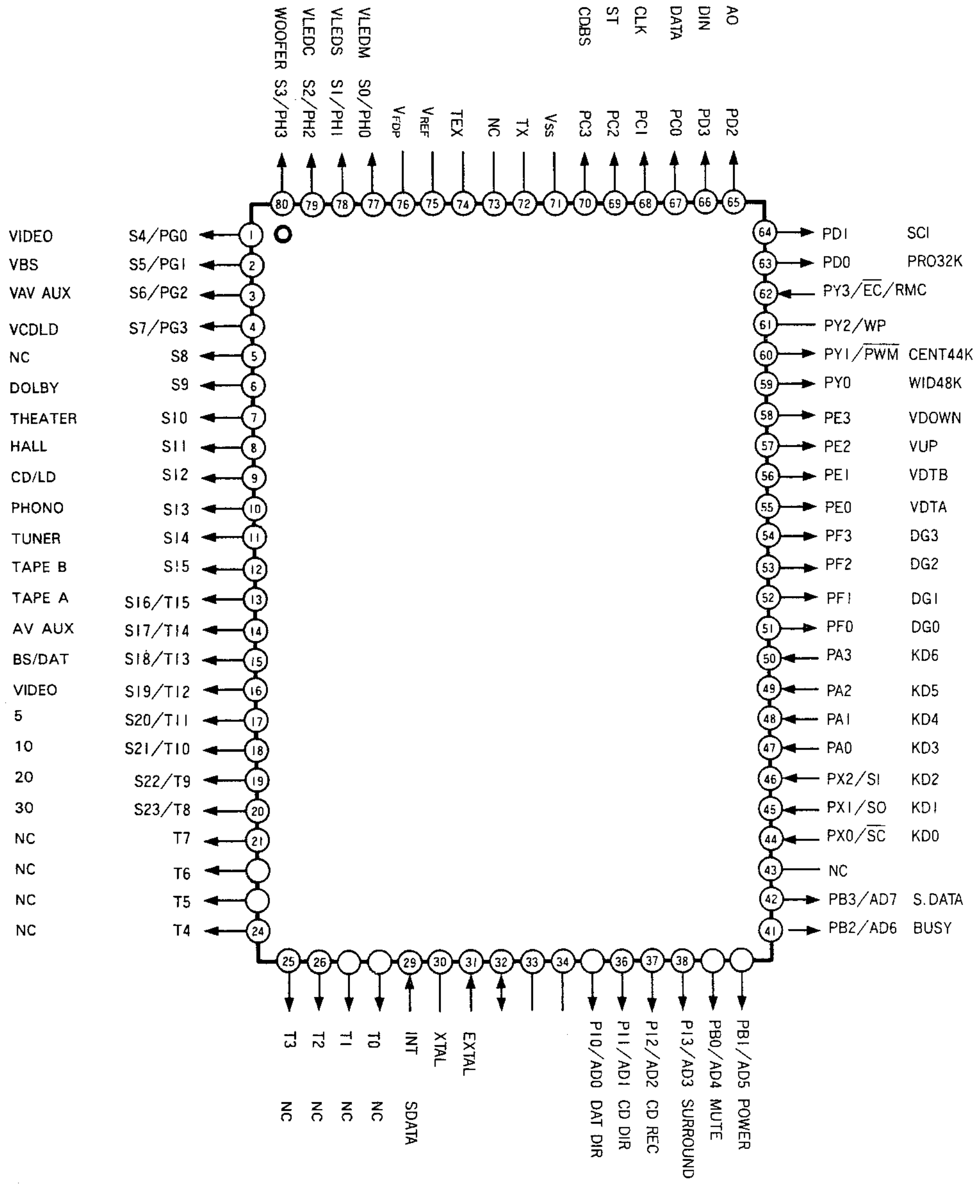
Signal processing unit (X32-1460-00)

Component	Component Name	Use/Function	Operation/Condition/Interchangeability
A1, A2	(HFBR-2550K)	Light receiving module	Converts the input light signal to an electric signal.
IC1	TC74HC00AP	Input selector	NAND gate ×4
IC2	YM3623B	Digital audio, interface format signal reception/regeneration	
IC3	SM5818AP	Digital filter	Octuple oversampling (16-bit or 18-bit)
IC4, 5	PCM61P	D/A converter	Converts the 18-bit digital signal to an analog signal.
IC4, 5	PCM56P-L	D/A converter	Converts the 16-bit digital signal to an analog signal.
IC6	(µPC4574C)	Active filter operation amplifier	A tertiary active LPF is constituted.
Q1	DTA124EN	Transistor switch	Stops crystal oscillation of IC2. OFF when an error signal is output.
Q2, 3	2SC2878 (B)	Transistor switch	Operates when emphasis data is input. ON when the DEF pin of IC2 is "H".
Q4, 5	2SC2878 (B)	Transistor switch	For muting. ON when the ERR pin of IC2 is "H".
Q6	2SA954 (L, K)	AVR	For −5 V power supply
Q7	2SC2003 (L, K)	AVR	For +5 V power supply
Q8	DTC124EN	Transistor switch	Muting control signal logic level change
Q9, Q10	2SA733 (A) (Q, R)	Transistor switch	Emphasis control signal logic level change

CIRCUIT DESCRIPTION

Microprocessor (CXP5058-544Q: IC1)

Pin connections


WOOFER S3/PH3 80
VLEDC S2/PH2 79
VLEDS S1/PH1 78
VLEDM S0/PH0 77
V_{FDP} 76
V_{REF} 75
TEX 74
NC 73
TX 72
Vss 71
CDBS PC3 70
ST PC2 69
CLK PC1 68
DATA PC0 67
DIN PD3 66
AO PD2 65
VIDEO S4/PG0 1
VBS S5/PG1 2
VAV AUX S6/PG2 3
VCDLD S7/PG3 4
NC S8 5
DOLBY S9 6
THEATER S10 7
HALL S11 8
CD/LD S12 9
PHONO S13 10
TUNER S14 11
TAPE B S15 12
TAPE A S16/T15 13
AV AUX S17/T14 14
BS/DAT S18/T13 15
VIDEO S19/T12 16
5 S20/T11 17
10 S21/T10 18
20 S22/T9 19
30 S23/T8 20
NC T7 21
NC T6
NC T5
NC T4 24
64 PD1 SCI
63 PD0 PRO32K
62 PY3/EC/RMC
61 PY2/WP
60 PY1/PWM CENT44K
59 PY0 WID48K
58 PE3 VDOWN
57 PE2 VUP
56 PE1 VDTB
55 PE0 VDTA
54 PF3 DG3
53 PF2 DG2
52 PF1 DG1
51 PF0 DG0
50 PA3 KD6
49 PA2 KD5
48 PA1 KD4
47 PA0 KD3
46 PX2/SI KD2
45 PX1/SO KD1
44 PX0/SC KD0
43 NC
42 PB3/AD7 S.DATA
41 PB2/AD6 BUSY
25 T3 NC
26 T2 NC
T1 NC
T0 NC
29 INT SDATA
30 XTAL
31 EXTAL
32
33
34
P10/AD0 DAT DIR
36 P11/AD1 CD DIR
37 P12/AD2 CD REC
38 P13/AD3 SURROUND
PB0/AD4 MUTE
PB1/AD5 POWER

CIRCUIT DESCRIPTION

Pin Functions:

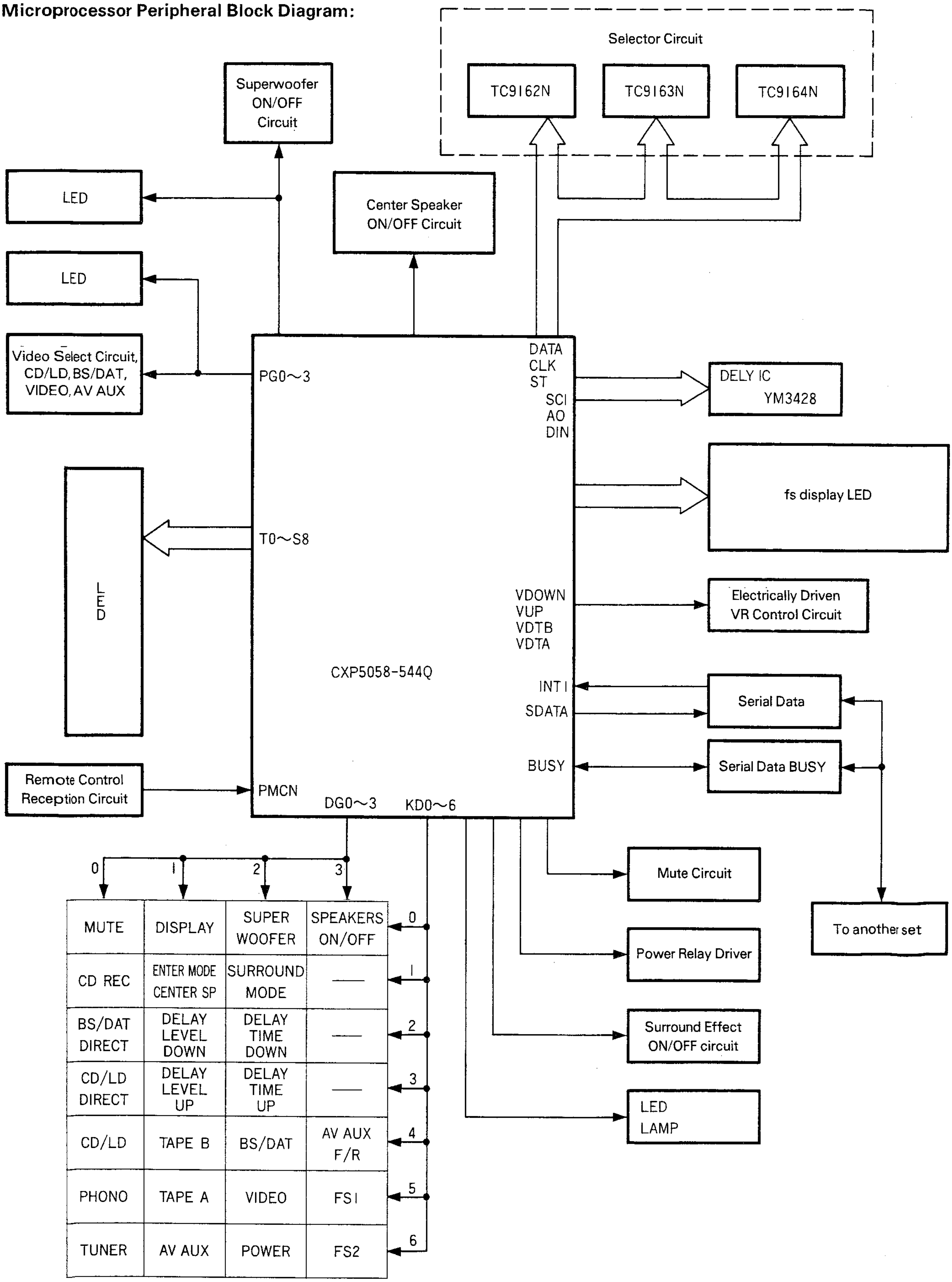
Pin No.	Pin Name	I/O	Name	Description
1	S4/PG0	O	VVIDEO	Video selector selection and display LED drive port. The LED lights with "H".
2	S5/PG1	O	VBS	Video selector selection and display LED drive port. The LED lights with "H".
3	S6/PG2	O	VAV AUX	Video selector selection and display LED drive port. The LED lights with "H".
4	S7/PG3	O	VCDLD	Video selector selection and display LED drive port. The LED lights with "H".
5	S8	O	NC	Unused and open
6	S9	O	DOLBY	Surround DOLBY display LED drive port. The LED lights with "H".
7	S10	O	THEATER	Surround THEATER display LED drive port. The LED lights with "H".
8	S11	O	HALL	Surround HALL display LED drive port. The LED lights with "H".
9	S12	O	CD/LD	Selector CD/LD display LED drive port. The LED lights with "H".
10	S13	O	PHONO	Selector PHONO display LED drive port. The LED lights with "H".
11	S14	O	TUNER	Selector TUNER display LED drive port. The LED lights with "H".
12	S15	O	TAPE B	Selector TAPE B display LED drive port. The LED lights with "H".
13	S16/T15	O	TAPE A	Selector TAPE A display LED drive port. The LED lights with "H".
14	S17/T14	O	AV AUX	Selector AV AUX display LED drive port. The LED lights with "H".
15	S18/T13	O	BS/DAT	Selector BS/DAT display LED drive port. The LED lights with "H".
16	S19/T12	O	VIDEO	Selector VIDEO display LED drive port. The LED lights with "H".
17	S20/T11	O	5	Delay time display LED drive port for 5 msec/10 msec. The LED lights with "H".
18	S21/T10	O	10	Delay time display LED drive port for 10 msec/15 msec. The LED lights with "H".
19	S22/T9	O	20	Delay time display LED drive port for 15 msec/20 msec. The LED lights with "H".
20	S23/T8	O	30	Delay time display LED drive port for 20 msec/30 msec. The LED lights with "H".
21	T7	O	NC	Unused and open
22	T6	O	NC	Unused and open
23	T5	O	NC	Unused and open
24	T4	O	NC	Unused and open
25	T3	O	NC	Unused and open
26	T2	O	NC	Unused and open
27	T1	O	NC	Unused and open
28	T0	O	NC	Unused and open
29	INT	I	SDATA	Intersystem serial data input port
30	XTAL	—		Clock OSC connection pin
31	EXTAL	I		Clock OSC connection pin
32	RST	I/O		Reset signal input and built-in power ON reset circuit output pin
33	NC	—		Open
34	VDD	—		Power supply pin
35	PI0/AD0	O	DAT DIR	BS/DAT direct display lamp drive port. The lamp lights with "H".
36	PI1/AD1	O	CD DIR	CD/LD direct display lamp drive port. The lamp lights with "H".
37	PI2/AD2	O	CD REC	CD recording display LED drive port. The LED lights with "L".
38	PI3/AD3	O	SURROUND	Surround ON/OFF port. ON with "H".
39	PB0/AD4	O	MUTE	Muting ON/OFF port. Muting ON with "L".
40	PB1/AD5	O	POWER	Power ON/OFF port. Power ON with "H".
41	PB2/AD6	I/O	BUSY	Intersystem serial data BUSY I/O port
42	PB3/AD7	O	SDATA	Intersystem serial data output port
43	NC	—		Unused and open
44	PX0/$\overline{SC}$	I	KD0	Key return signal
45	PX1/SO	I	KD1	Key return signal
46	PX2/SI	I	KD2	Key return signal
47	PA0	I	KD3	Key return signal
48	PA1	I	KD4	Key return signal
49	PA2	I	KD5	Key return signal

CIRCUIT DESCRIPTION

Pin No.	Pin Name	I/O	Name	Description
50	PA3	I	KD6	Key return signal
51	PF0	O	DG0	Key scan signal
52	PF1	O	DG1	Key scan signal
53	PF2	O	DG2	Key scan signal
54	PF3	O	DG3	Key scan signal
55	PE0	O	VDTA	Rear volume up drive port. Volume up with "H".
56	PE1	O	VDTB	Rear volume down drive port. Volume down with "H".
57	PE2	O	VUP	Master volume up drive port. Volume up with "H".
58	PE3	O	VDOWN	Master volume down drive port. Volume down with "H".
59	PY0	O	WID48K	fs 48 kHz display LED drive port. The LED lights with "L".
60	PY1/$\overline{\text{PWM}}$	O	CENT44K	fs 44 kHz display LED drive port. The LED lights with "L".
61	PY2/WP	I		Unused. Connected with GND.
62	PY3/$\overline{\text{EC}}$/RMC	I	RMCN	Remote control input pin
63	PD0	O	PRO32K	fs 32 kHz display drive port
64	PD1	O	SCI	Delay IC clock output port
65	PD2	O	A0	Delay IC address/data identification signal output port
66	PD3	O	DIN	Delay IC data output port
67	PC0	O	DATA	Selector IC data output port
68	PC1	O	CLK	Selector IC clock output port
69	PC2	O	ST	Selector IC strobe output port
70	PC3	O	CDBS	DAC selection signal output port H: BS/DAT L: CD/LD
71	Vss	—		GND
72	TX	—		Unused and open
73	NC	—		Open
74	TEX	I		Unused. Connected with GND.
75	V_{REF}	—		Unused. Connected with V_{DD}.
76	V_{FDP}	—		Unused and connected with GND.
77	S0/PH0	O	VLEDM	Master volume index LED drive port. The LED lights with "H".
78	S1/PH1	O	VLEDS	Rear volume index LED drive port. The LED lights with "H".
79	S2/PH2	O	VLEDC	Center volume index LED drive port. The LED lights with "H".
80	S3/PH3	O	WOOFER	Superwoofer ON/OFF and display LED drive port. ON with "H".

CIRCUIT DESCRIPTION

Microprocessor Peripheral Block Diagram:

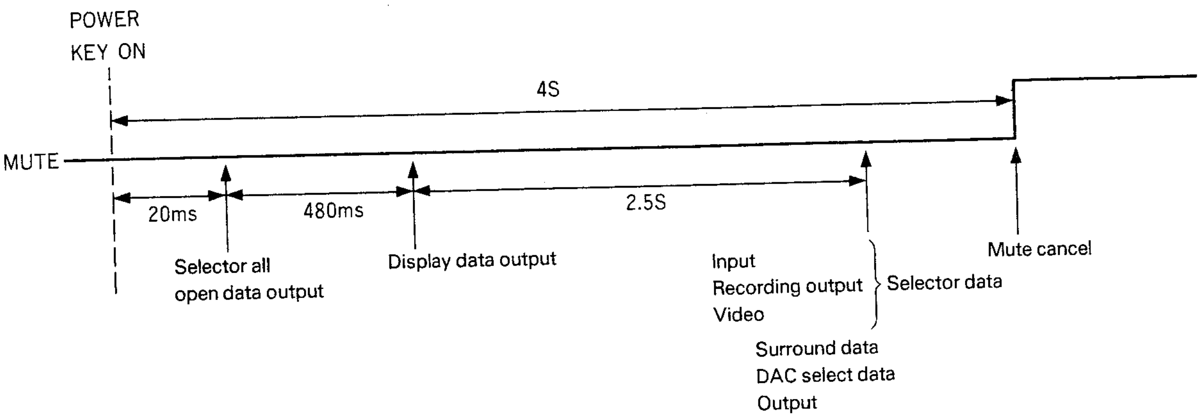

Selector Circuit
TC9162N
TC9163N
TC9164N
Superwoofer ON/OFF Circuit
LED
Center Speaker ON/OFF Circuit
LED
Video Select Circuit, CD/LD, BS/DAT, VIDEO, AV AUX
PG0~3
DATA
CLK
ST
SCI
AO
DIN
DELY IC YM3428
fs display LED
LED
T0~S8
VDOWN
VUP
VDTB
VDTA
Electrically Driven VR Control Circuit
CXP5058-544Q
INT I
SDATA
Serial Data
BUSY
Serial Data BUSY
Remote Control Reception Circuit
PMCN
DG0~3
KD0~6
0
1
2
3
4
5
6
Mute Circuit
To another set
Power Relay Driver
Surround Effect ON/OFF circuit
LED LAMP

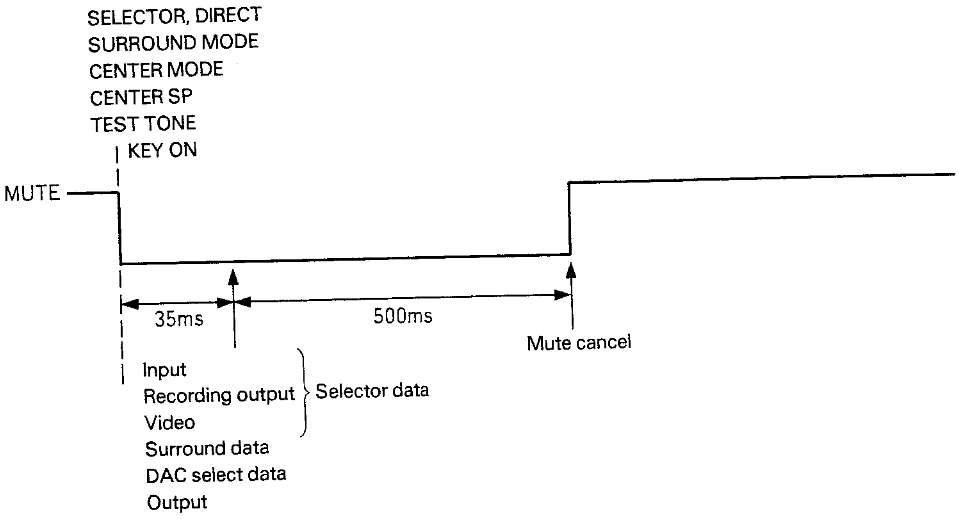
	0	1	2	3
0	MUTE	DISPLAY	SUPER WOOFER	SPEAKERS ON/OFF
1	CD REC	ENTER MODE CENTER SP	SURROUND MODE	—
2	BS/DAT DIRECT	DELAY LEVEL DOWN	DELAY TIME DOWN	—
3	CD/LD DIRECT	DELAY LEVEL UP	DELAY TIME UP	—
4	CD/LD	TAPE B	BS/DAT	AV AUX F/R
5	PHONO	TAPE A	VIDEO	FS1
6	TUNER	AV AUX	POWER	FS2

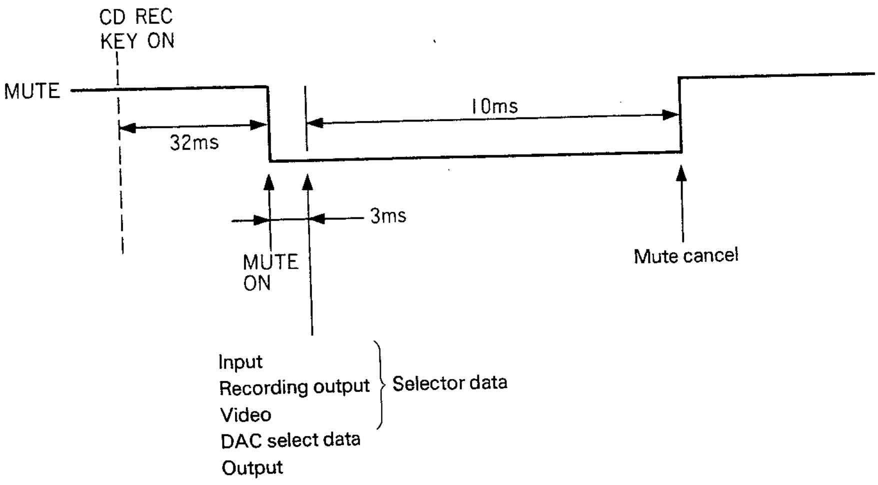
CIRCUIT DESCRIPTION

Timing Chart:

(1)MUTE

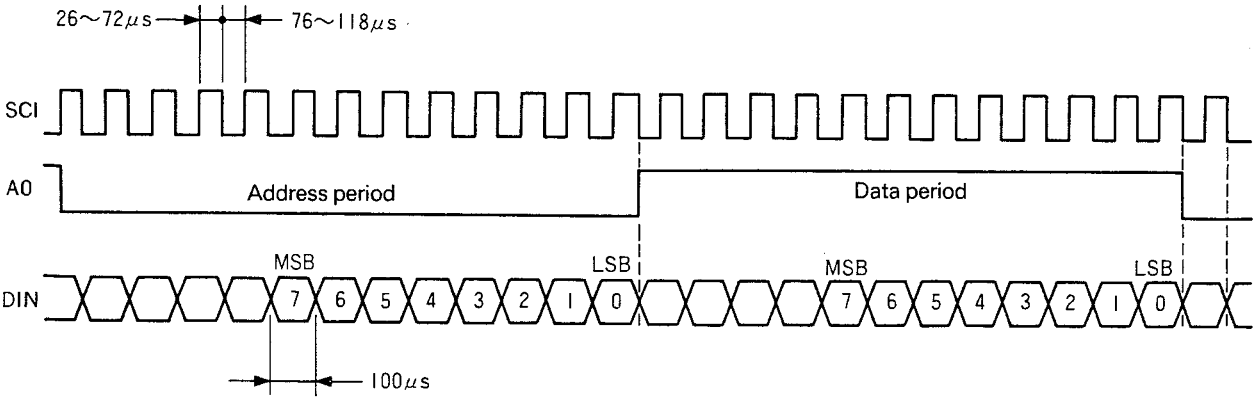

POWER
KEY ON
4S
MUTE
20ms
480ms
2.5S
Selector all
open data output
Display data output
Input
Recording output
Video
Selector data
Surround data
DAC select data
Output
Mute cancel


SELECTOR, DIRECT
SURROUND MODE
CENTER MODE
CENTER SP
TEST TONE
KEY ON
MUTE
35ms
500ms
Mute cancel
Input
Recording output
Video
Selector data
Surround data
DAC select data
Output


CD REC
KEY ON
MUTE
32ms
10ms
3ms
MUTE
ON
Mute cancel
Input
Recording output
Video
Selector data
DAC select data
Output

CIRCUIT DESCRIPTION

Digital Delay IC (YM-3428) Control Data

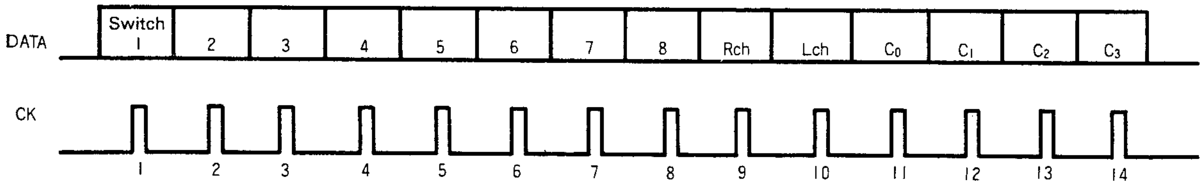

26~72μs
76~118μs
SCI
A0
Address period
Data period
MSB
LSB
MSB
LSB
DIN
7
6
5
4
3
2
1
0
7
6
5
4
3
2
1
0
100μs

Selector IC Data

Operation

Data input

The TC9162N, TC9163N or TC9164N is capable of arbitrarily controlling each analog switch by entering the specified data to the DATA, CK and ST pins. The data consists of 14 bits as follows:


DATA
Switch 1
2
3
4
5
6
7
8
Rch
Lch
C0
C1
C2
C3
CK
1
2
3
4
5
6
7
8
9
10
11
12
13
14

Bits 1-8 correspond to analog switches 1-8. To set a switch to ON, its corresponding bit is set as "1". (Note)
Bits 9 and 10 are the right and left channel select bits, respectively. When either of these two bits is set to "1", its corresponding channel is selected. The left and right channels can be selected at the same time ("1"/"1") or independently ("1"/"0" or "0"/"1").
Bits 11-14 form a code which is used in chip selection. For an example of the simultaneous use of TC9162N, TC9163N and TC9164N, the DATA, CK and ST pins are connected in common. From these three, one is selectable depending upon the "1"/"0" setting of bits 11-14 as shown below.

	C_0	C_1	C_2	C_3
TC9162N	0	0	0	0
TC9163N	1	0	0	0
TC9164N	0	1	0	0

Note: Of TC9162N, 7 switch circuits exist. Thus, be sure to set bit 8 to "0" for use.

CIRCUIT DESCRIPTION

Initial Status

ITEM	STATUS
INPUT	TUNER
VIDEO INPUT	VIDEO
REC OUT	TUNER
CD/LD or BS/DAT DIRECT	OFF
MUTE	ON
SUPER WOOFER	OFF
CENTER SPEAKER	OFF
CD REC	OFF
DISPLAY	INPUT MODE
SURROUND MODE	BYPASS
CENTER MODE	NORMAL
DELAY TIME	THEATER.............................15 ms HALL ....15 ms
DELAY LEVEL	−4 dB
POWER	OFF

1. Test Mode

(1) Setting by key on this unit itself

1) Setting method:
While pressing the selector CD/LD key, plug in the power.

2) Canceling method:
Unplug the power.

3) Contents:

a. LEDs all light.
When the power is plugged in while pressing the selector CD/LD key, the power is turned ON to enter the all LED lighting mode. This mode is canceled by operating a tact key other than the POWER key.

b. Delay time up/down operation
- For DOLBY, 3 points of 30 msec, 20 msec and 15 msec; and for THEATER/HALL, 3 points of 30.0 msec, 15.0 msec and 0 msec.

c. Electrically driven VR volume up/down operation
Pressing the master (front) VOL. UP key of the remote control continuously causes every electrically driven VR to act to raise the volume up, whereas releasing the key from hand pressure causes its stop. The same applies to the volume down operation.

2. System operation outline

The following describes the contents of the basic operation.

(1) Two-way easy operation

When some unit is played, the input selector of the amplifier is automatically set to its corresponding position. In addition, when the input selector of the amplifier is handled, the unit thereby selected starts play.

a. Any unit, when entering the play mode due to a key operation, etc. (a case where the play mode is engaged not then but afterwards is included), issues the PLAY code.
Upon receipt of the PLAY code, an other unit (amplifier, deck's amplifier, receiver) sets its own input selector, if provided, to the position corresponding to the former unit which has issued the PLAY code.
However, the amplifier, unprovided with an independent REC OUT selector, ignores the above-said PLAY code when the deck is in the recording mode.

b. The amplifier issues the selector code when the input selector changes in position. In addition, even when the input selector does not change in position, when a selector key is pressed, the amplifier issues the selector code corresponding to the position thereby engaged.
An other unit than the amplifier analyzes this selector code. Thus, if its own position is indicated and the stop mode is then engaged, it performs play, while if another unit is indicated and it is in the play mode, it stops. However, it does not stop if recording is made to on the deck from itself.

(2) REC OUT selector lock (amplifier and deck)

Upon receipt of the REC code from the deck, the amplifier fixes the REC OUT selector to its current position and keeps this position until the arrival of the STOP, PLAY or ON code from the deck.
A unit, unprovided with an independent REC OUT selector, locks its input selector because of input=REC OUT.

(3) Synchronous recording (CD/LD player and cassette deck, or turntable and cassette deck)

The deck can know the current recording source by analyzing the selector code from the amplifier at any time. In addition, after the recording mode is entered, the recording source does not change because of the preceding item (2).
Page 14:
By virtue of these two principles, the deck can obtain synchronization by analyzing the code from the device from which recording is made at present.

CIRCUIT DESCRIPTION

(A) Synchronous operation between CD player and cassette deck

CD operation Deck status	STOP→PLAY	PAUSE→PLAY	PLAY→PAUSE	PLAY→STOP	PAUSE→STOP	PLAY→tray open	PAUSE→tray open
Recording (in tape run)	Non change	Non change	ARM is entered, 4 seconds later, the recording pause mode is entered.	ARM is entered, 4 seconds later the tape stops.	←	←	←
ARM (auto recording mute)	ARM is stopped, and recording is made.	←	After the termination of the current ARM time, the recording pause mode is entered.	After the termination of the current ARM time, the stop mode is entered.	←	←	←
Recording pause	The recording mode is entered.	←	Non change	The stop mode is entered.	←	←	←

(B) Synchronous operation between turntable and cassette deck

Turntable operation Deck status	Arm up→down (mute ON→OFF)	Arm down→up (mute OFF→ON)	Arm return to rest
Recording (in tape run)	Non change	ARM is entered. After the termination of ARM time (4 seconds later), the recording pause mode is entered.	ARM is entered. After the termination of ARM time (4 seconds later), the stop mode is entered.
ARM (auto recording mute)	ARM is stopped. The recording mode is restored.	After the termination of the current ARM time, the recording pause mode is entered.	After the termination of the current ARM time, the stop mode is entered.
Recording pause	The recording mode is entered.	Non change	The stop mode is entered.

Note: In case of (A), the muting is canceled after the CD player plays or it delays 2.2 seconds after output of start code. The aiming is that even when the deck is in operation transit at start of the CD player, the head section of the recording is protected from being muted.

(4) Remote control signal reception

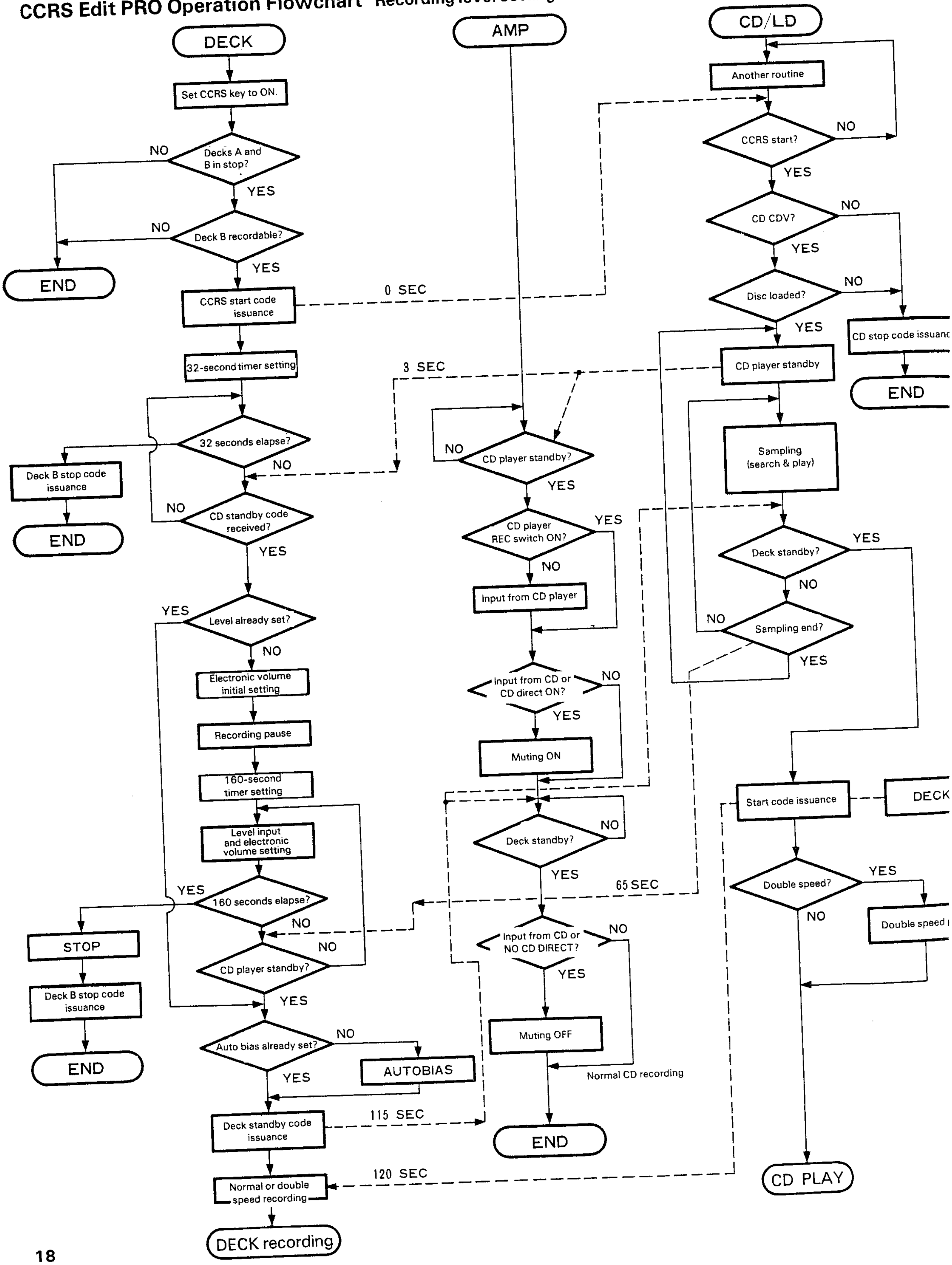
Any unit (amplifier, deck's amplifier, receiver) provided with a feature of receiving the light signal from the system remote control (custom code 0B8H) converts the received code from the system remote control, if different than processed by itself, into a serial code, which is then output. Any other unit receives and analyzes this code to perform the operation according to the remote control.

The keys of the remote control and their corresponding serial codes are assigned to the respective units, correspondingly and exclusively. The numeral keys (0 to 9) are shared between the tuner and the CD player in common. Of these both, one then selected by the input selector undergoes the key operation. For this reason, either of the tuner and the CD player always analyzes the input selector code of the amplifier, and memorizes to which position the input selector of the amplifier is set, its own position or another unit's position, and only when the input selector of the amplifier is set to its own position accepts the code of a numeral key pressed.

CIRCUIT DESCRIPTION

CCRS Edit PRO Operation Flowchart

Recording level setting and elapsed time

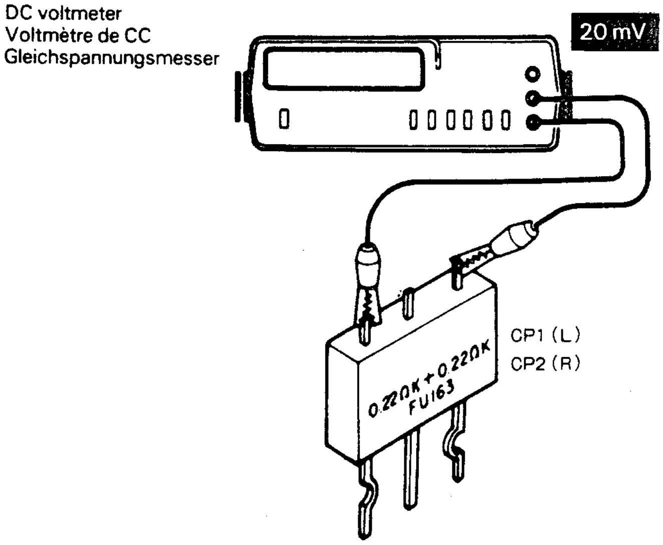

DECK
Set CCRS key to ON.
Decks A and B in stop?
NO
YES
Deck B recordable?
NO
YES
END
CCRS start code issuance
0 SEC
32-second timer setting
3 SEC
32 seconds elapse?
Deck B stop code issuance
END
NO
CD standby code received?
NO
YES
Level already set?
YES
NO
Electronic volume initial setting
Recording pause
160-second timer setting
Level input and electronic volume setting
160 seconds elapse?
YES
NO
STOP
Deck B stop code issuance
END
CD player standby?
NO
YES
Auto bias already set?
NO
AUTOBIAS
YES
Deck standby code issuance
115 SEC
Normal or double speed recording
120 SEC
DECK recording
AMP
CD player standby?
NO
YES
CD player REC switch ON?
YES
NO
Input from CD player
Input from CD or CD direct ON?
NO
YES
Muting ON
Deck standby?
NO
YES
65 SEC
Input from CD or NO CD DIRECT?
NO
YES
Muting OFF
Normal CD recording
END
CD/LD
Another routine
CCRS start?
NO
YES
CD CDV?
NO
YES
Disc loaded?
NO
YES
CD stop code issuanc
END
CD player standby
Sampling (search & play)
Deck standby?
YES
NO
Sampling end?
NO
YES
Start code issuance
DECK
Double speed?
YES
NO
Double speed
CD PLAY

ADJUSTMENT/REGLAGE/ABGLEICH

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	AMPLIFIER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
1	IDLE CURRENT	—	Connect a DC voltmeter across CP1 CP2	VOLUME: 0	VR1 (L) VR2 (R) (X89-)	20 mV	(a)

N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DE L'AMPLIFICATEUR	POINT L'ALIGNEMENT	ALIGNER POUR	FIG.
1	COURANT DE POLARISATION	—	Connecter un voltmètre de CC sur CP1 (G) CP2 (D)	VOLUME: 0	VR1 (G) VR2 (D) (X89-)	20 mV	(a)

NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	VERSTÄRKER EINSTELLUNG	ABGLEICH-PUNKTE	ABGLEICHEN FÜR	ABB.
1	LEERLAUFSTROM	—	Einen Gleichspannungs-messer über CP1 (L) CP2 (R) anschließen.	VOLUME: 0	VR1 (L) VR2 (R) (X89-)	20 mV	(a)


DC voltmeter
Voltmètre de CC
Gleichspannungsmesser
20 mV
0
000000
CP1 (L)
CP2 (R)
0.22ΩK+0.22ΩK
FU163

(a)

CIRCUIT DESCRIPTION

X07-2490-01

Ref. No.		Address
IC	Q	
	1	3AK
	2	3AK
	3	3AK
	4	3AK
	5	4AK
	6	4AK
	7	4AK
	8	4AK
	9	5AJ
	10	5AL
	11	5AK
	12	5AM
	13	5AK
	14	5AL
	15	5AH
	16	5AK
	17	5AJ
	18	5AL
	19	5AK
	20	5AM
	21	5AJ
	22	5AL
	23	3AK
	24	4AJ
	25	3AJ
	26	5AH
	27	5AH
	28	3AH
	29	
	30	2AM
	31	2AH
1		3AH
2		5AJ
3		3AH
4		3AM

X08-2310-01

Ref. No.		Address
IC	Q	
	1	2AP
	2	6AR
	3	6AR
1		2AS
2		2AR
3		
4		2AP
5		3AP
6		4AQ
7		2AP
8		3AS
9		
10		
11		2AP
12		4AQ
13		6AS
14		6AJ

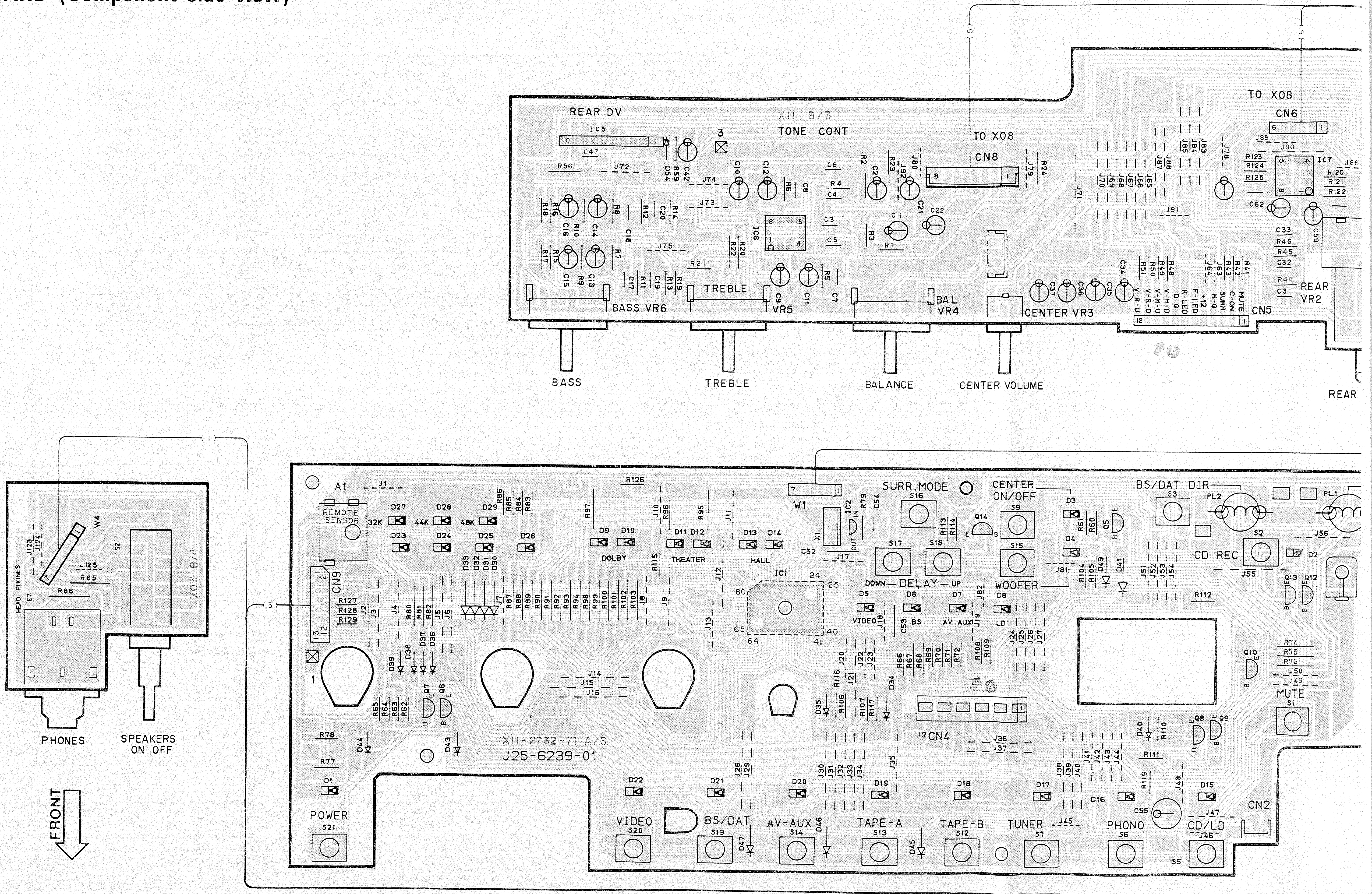
X11-2730-00

Ref. No.		Address
IC	Q	
	1	2K
	2	2K
	3	2L
	4	2L
	5	4I
	6	6D
	7	6D
	8	6I
	9	6I
	10	6J
	11	
	12	5J
	13	5J
	14	4H
1		5F
2		4G
3		
4		2M
5		2E
6		2F
7		2J

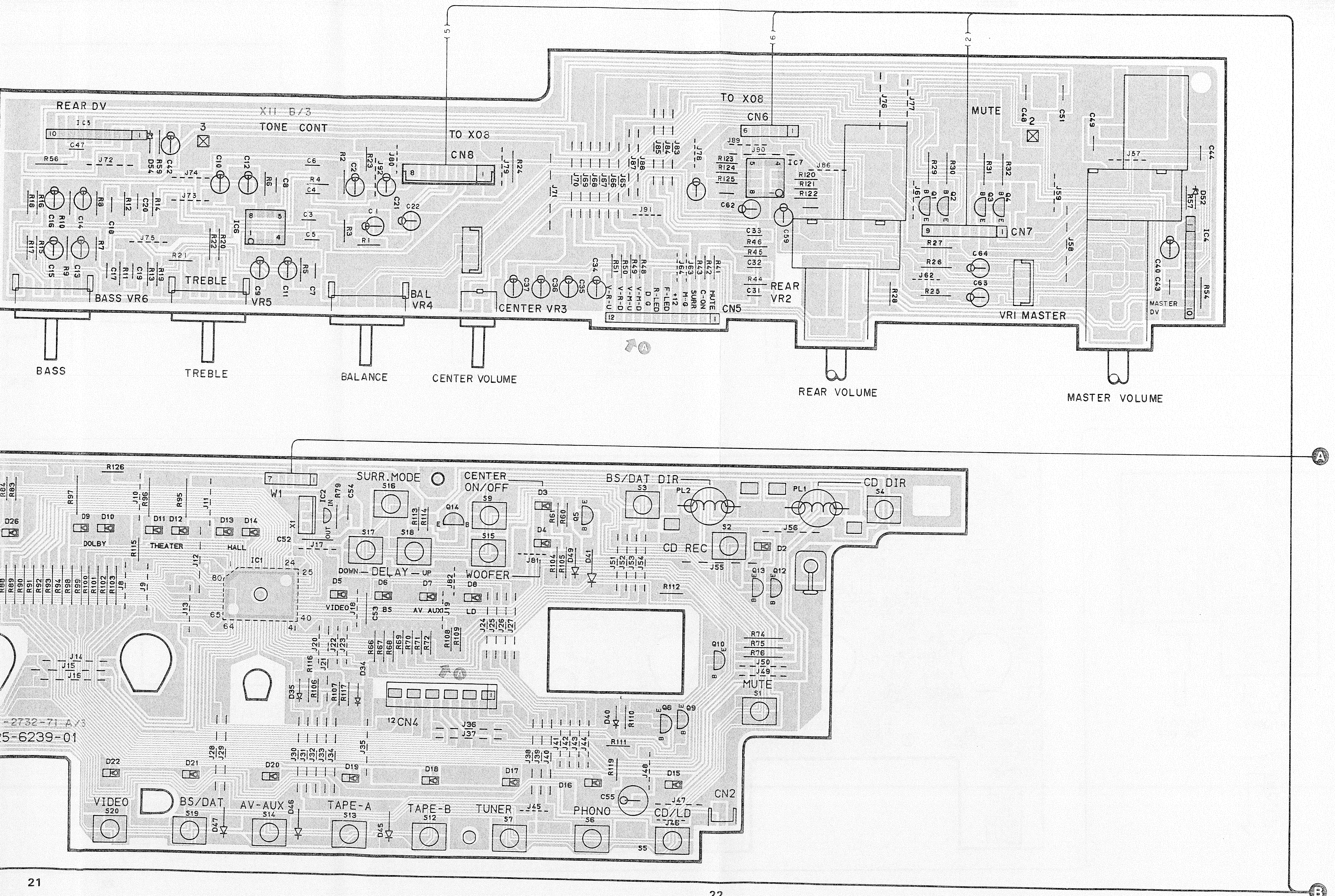
X32-1460-01

Ref. No.		Address
IC	Q	
	1	2AU
	2	3AW
	3	3AV
	4	3AW
	5	4AV
	6	3AU
	7	3AU
	8	3AV
	9	4AV
	10	4AV
	11	4AV
1		2AU
2		2AV
3		2AW
4		3AW
5		3AV

P.C. BOARD (Component side view)

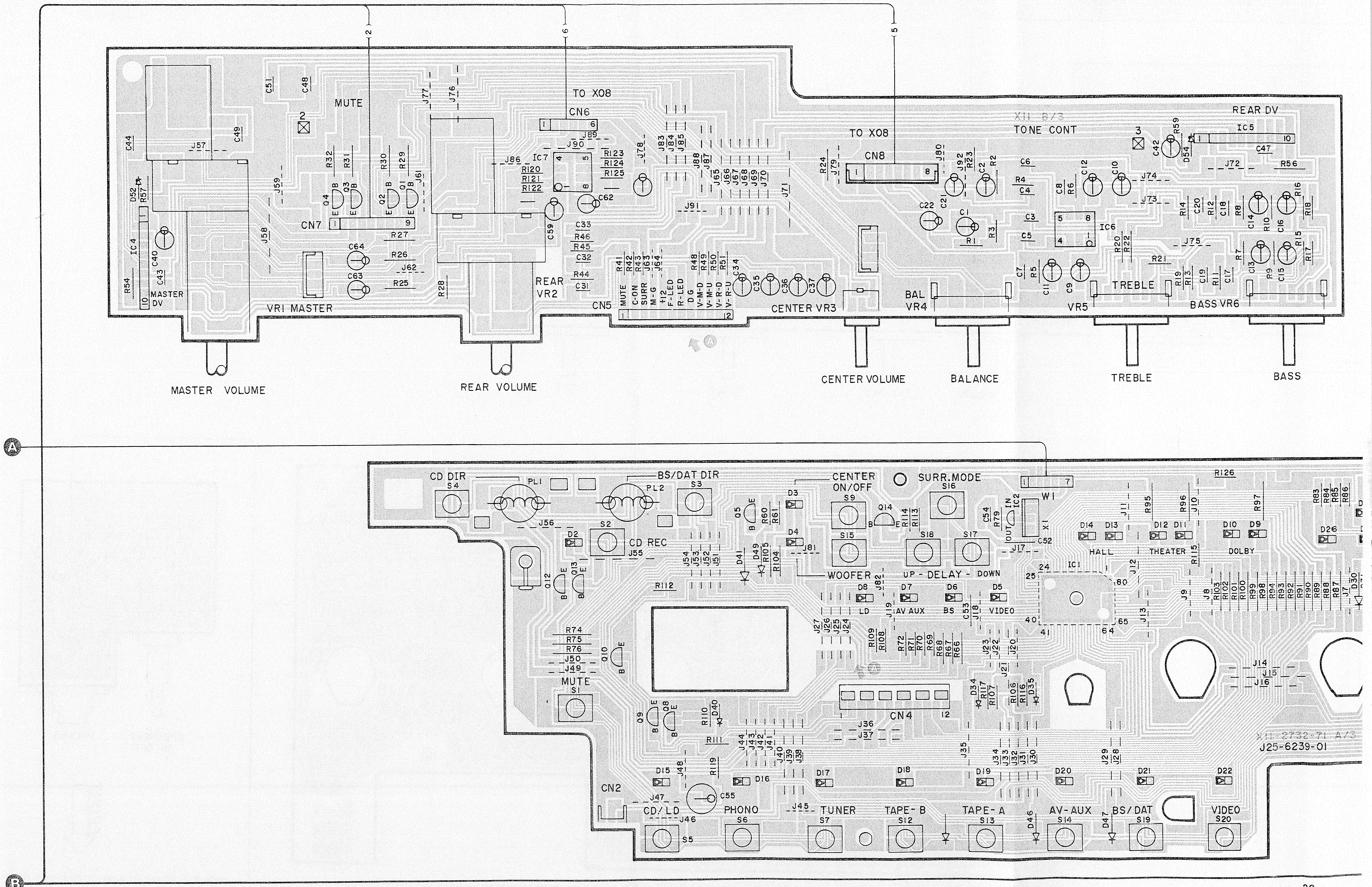


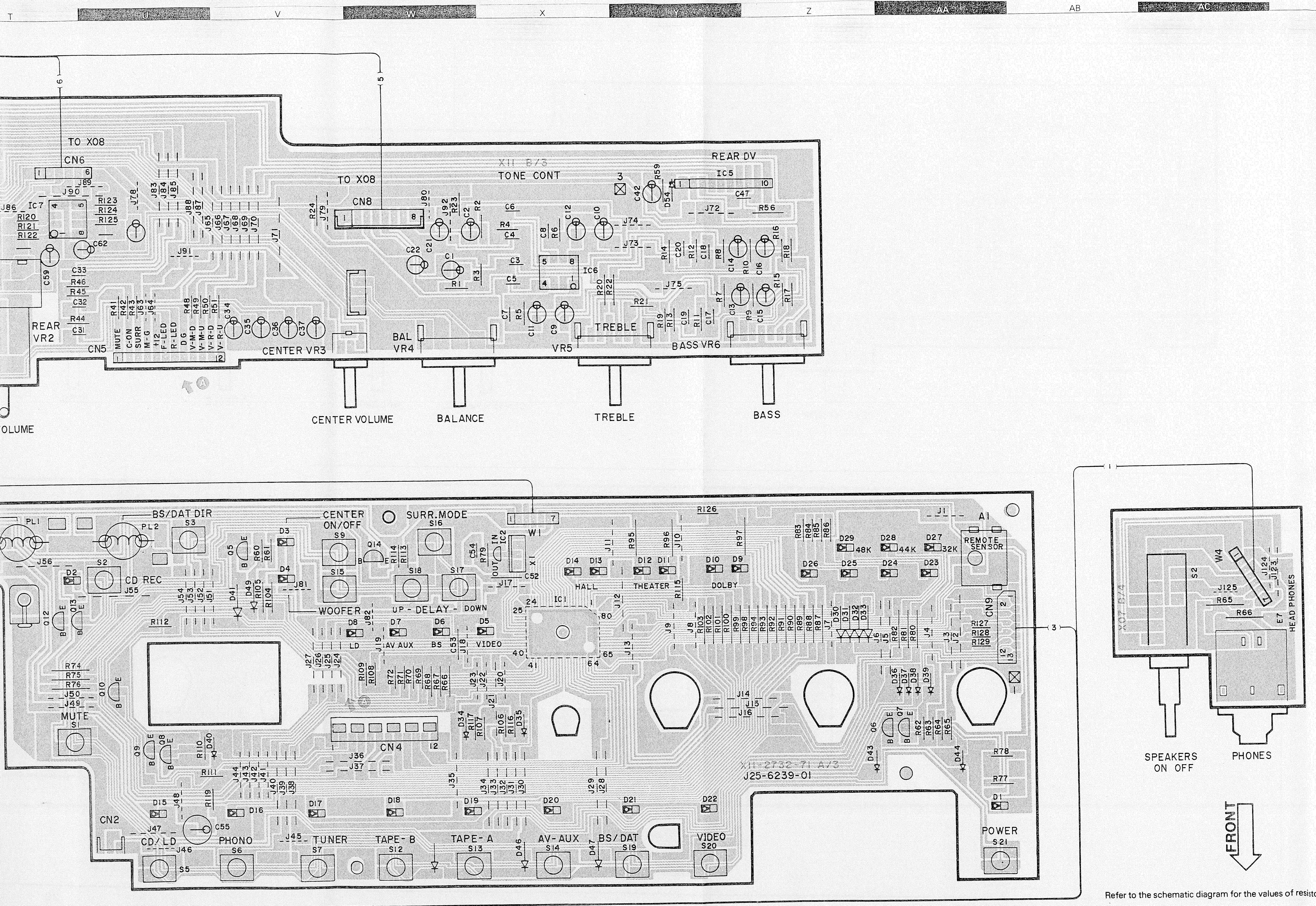
REAR DV
IC5
X11 B/3
TONE CONT
TO X08
CN8
CN6
IC6
IC7
BASS VR6
TREBLE
VR5
BAL VR4
CENTER VR3
CN5
REAR VR2
BASS
TREBLE
BALANCE
CENTER VOLUME
REAR
V-R-U
V-R-D
V-M-U
V-M-D
D G
R-LED
F-LED
+12
SURR
M-G
C-ON
MUTE
HEAD PHONES
X07 B/4
PHONES
SPEAKERS
ON OFF
FRONT
A1
REMOTE SENSOR
CN9
32K
44K
48K
DOLBY
THEATER
HALL
IC1
IC2
W1
SURR.MODE
S16
CENTER ON/OFF
S9
BS/DAT DIR
S3
PL2
PL1
CD REC
S2
DOWN
DELAY
UP
WOOFER
VIDEO
BS
AV AUX
LD
CN4
X11-2732-71 A/3
J25-6239-01
MUTE
S1
CN2
POWER
S21
VIDEO
S20
BS/DAT
S19
AV-AUX
S14
TAPE-A
S13
TAPE-B
S12
TUNER
S7
PHONO
S6
CD/LD
S5


REAR DV
IC5
TONE CONT
TO X08
CN8
CN6
IC7
MUTE
CN7
CN5
BASS VR6
TREBLE
VR5
BAL VR4
CENTER VR3
REAR VR2
VR1 MASTER
MASTER DV
IC4
BASS
TREBLE
BALANCE
CENTER VOLUME
REAR VOLUME
MASTER VOLUME
W1
SURR.MODE S16
CENTER ON/OFF S9
BS/DAT DIR S3
PL2
PL1
CD DIR S4
DOLBY
THEATER
HALL
IC1
IC2
DOWN — DELAY — UP
S17
S18
S15
WOOFER
CD REC S2
VIDEO
BS
AV AUX
LD
CN4
MUTE S1
CN2
VIDEO S20
BS/DAT S19
AV-AUX S14
TAPE-A S13
TAPE-B S12
TUNER S7
PHONO S6
CD/LD S5
-2732-71 A/3
25-6239-01
A
B

Refer to the schematic diagram for the values of resistors and capacitors.

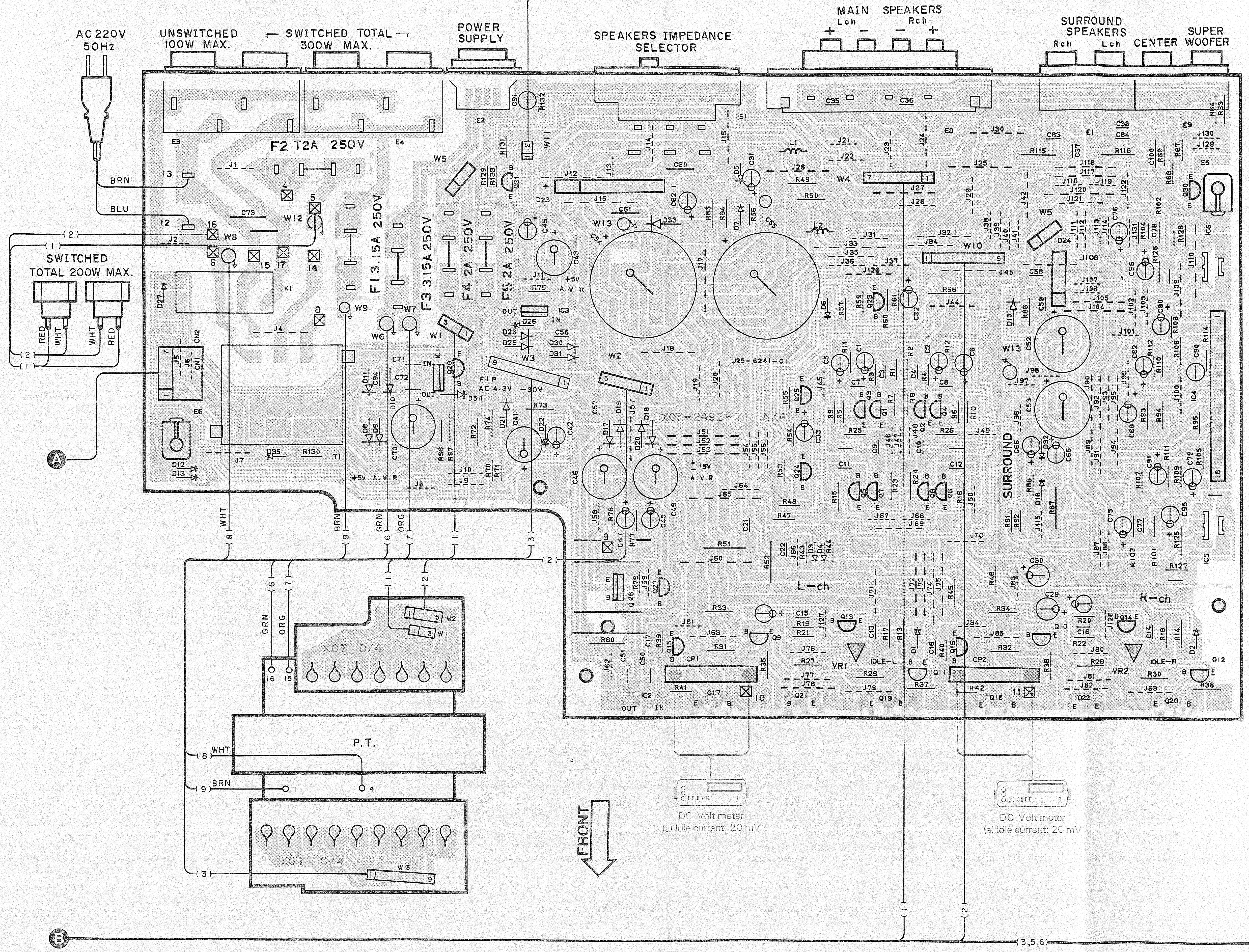
P.C. BOARD (Foil side view)


2
6
5
TO X08
CN6
MUTE
C51
C48
J77
J76
C44
J57
C49
J86
IC7
R120
R121
R122
R123
R124
R125
J89
J90
R32
R31
R30
R29
J61
Q4
Q3
Q2
Q1
J59
J58
CN7
9
R27
R26
J62
R25
C64
C63
C62
C59
C33
R46
R45
C32
R44
C31
D52
R57
IC4
C40
C43
R54
MASTER DV
VR1 MASTER
R28
REAR VR2
CN5
MUTE
C-ON
SURR
M-G
+12
F-LED
R-LED
DG
V-M-D
V-M-U
V-R-D
V-R-U
R41
R42
R43
J63
J64
R48
R49
R50
R51
C34
C35
C36
C37
CENTER VR3
J78
J83
J84
J85
J88
J87
J65
J66
J67
J68
J69
J70
J71
J91
TO X08
CN8
R24
J79
J80
J92
R23
R2
C22
C21
C1
R1
R3
C6
R4
C4
C3
C5
C8
R6
C12
C10
IC6
R20
R22
R21
C7
R5
C11
C9
BAL VR4
VR5
TREBLE
X11-B/3
TONE CONT
3
C42
R59
D54
REAR DV
IC5
C47
J72
R56
J74
J73
R14
C20
R12
C18
R8
C14
R10
C16
R16
R18
J75
R7
C13
R9
C15
R15
R17
R19
R13
C19
R11
C17
BASS VR6
MASTER VOLUME
REAR VOLUME
CENTER VOLUME
BALANCE
TREBLE
BASS
A
B
CD DIR
S4
PL1
BS/DAT DIR
PL2
S3
J56
S2
D2
CD REC
J55
Q12
Q13
R112
J54
J53
J52
J51
Q5
R60
R61
D41
D49
R105
R104
D3
D4
J81
CENTER ON/OFF
S9
S15
Q14
R114
R113
SURR. MODE
S16
S18
S17
C54
R79
IC2
X1
C52
W1
7
J17
WOOFER
UP - DELAY - DOWN
D8
J82
D7
D6
D5
LD
AV AUX
BS
VIDEO
J19
C53
J18
IC1
24
25
80
40
41
64
65
D14
D13
HALL
J11
R95
D12
D11
THEATER
R96
J10
R115
R97
D10
D9
DOLBY
R126
R83
R84
R85
R86
D26
J12
J13
J9
J8
R103
R102
R101
R100
R99
R98
R94
R93
R92
R91
R90
R89
R88
R87
J7
D30
R74
R75
R76
J50
J49
Q10
MUTE
S1
J27
J26
J25
J24
R109
R108
R72
R71
R70
R69
R68
R67
R66
J23
J22
J20
J21
D34
R117
R107
R106
R116
D35
CN4
12
J14
J15
J16
Q9
Q8
R110
D40
R111
J44
J43
J42
J41
J40
J39
J38
J36
J37
J35
J34
J33
J32
J31
J30
J29
J28
X11-2732-71 A/3
J25-6239-01
D15
J48
R119
D16
D17
D18
D19
D20
D21
D22
CN2
J47
C55
J45
CD/LD
J46
S5
PHONO
S6
TUNER
S7
TAPE-B
S12
TAPE-A
S13
D46
AV-AUX
S14
D47
BS/DAT
S19
VIDEO
S20


T
U
V
W
X
Y
Z
AA
AB
AC
AD
TO X08
CN6
IC7
REAR VR2
CN5
MUTE
C-ON
SURR
M-G
+12
F-LED
R-LED
DG
V-M-D
V-M-U
V-R-D
V-R-U
CENTER VR3
TO X08
CN8
X11 B/3
TONE CONT
IC6
REAR DV
IC5
BAL VR4
VR5
TREBLE
BASS VR6
OLUME
CENTER VOLUME
BALANCE
TREBLE
BASS
PL1
PL2
BS/DAT DIR
CD REC
CENTER ON/OFF
SURR.MODE
W1
IC1
WOOFER
UP - DELAY - DOWN
LD
AV AUX
BS
VIDEO
HALL
THEATER
DOLBY
48K
44K
32K
A1
REMOTE SENSOR
CN9
CN4
MUTE
CN2
CD/LD
PHONO
TUNER
TAPE-B
TAPE-A
AV-AUX
BS/DAT
VIDEO
POWER
X11-2732-71 A/3
J25-6239-01
X07 B/4
W4
HEAD PHONES
SPEAKERS ON OFF
PHONES
FRONT

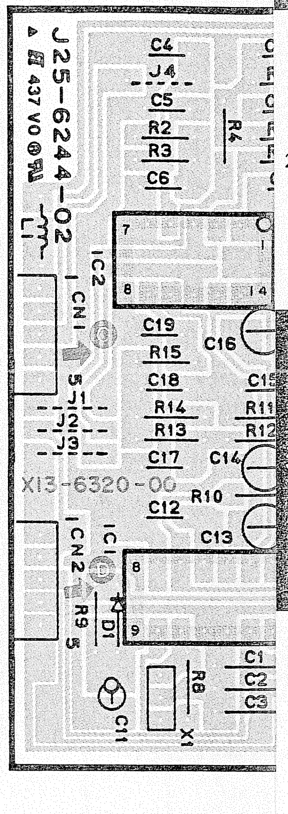
Refer to the schematic diagram for the values of resistors and capacitors.

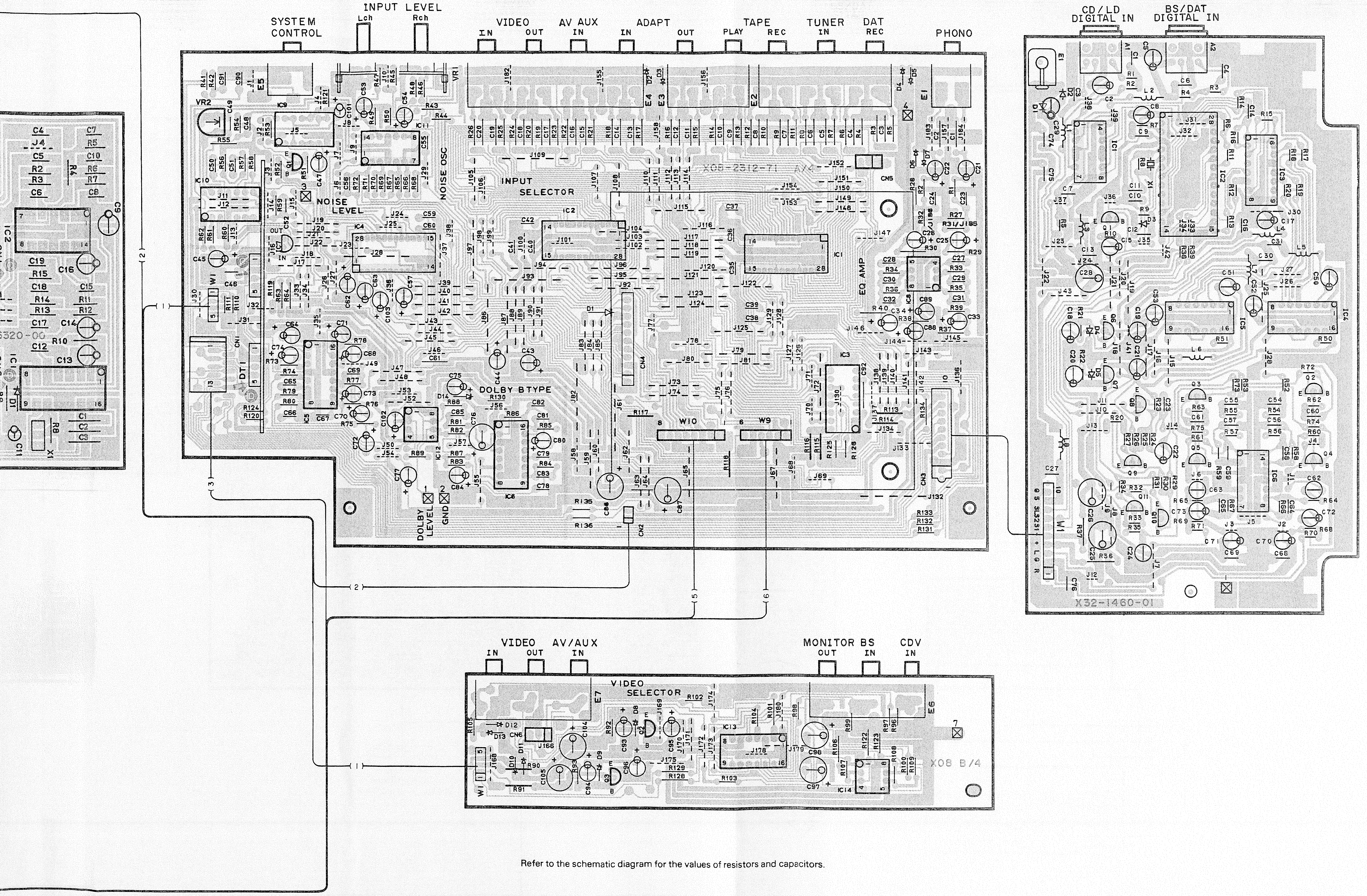
P.C. BOARD (Component side view)


AC 220V 50Hz
UNSWITCHED 100W MAX.
SWITCHED TOTAL 300W MAX.
POWER SUPPLY
SPEAKERS IMPEDANCE SELECTOR
MAIN SPEAKERS
Lch
Rch
+
−
SURROUND SPEAKERS
Rch
Lch
CENTER
SUPER WOOFER
SWITCHED TOTAL 200W MAX.
BRN
BLU
RED
WHT
GRN
ORG
F2 T2A 250V
F1 3.15A 250V
F3 3.15A 250V
F4 2A 250V
F5 2A 250V
+5V A.V.R
+15V A.V.R
FIP
AC 4.3V
−30V
X07-2492-71 A/4
J25-6241-01
SURROUND
L-ch
R-ch
IDLE-L
IDLE-R
VR1
VR2
CP1
CP2
OUT
IN
IC1
IC2
IC3
K1
T1
P.T.
X07 D/4
X07 C/4
W1
W2
W3
W5
FRONT
A
B
(3,5,6)
DC Volt meter
(a) Idle current: 20 mV
DC Volt meter
(a) Idle current: 20 mV

P.C

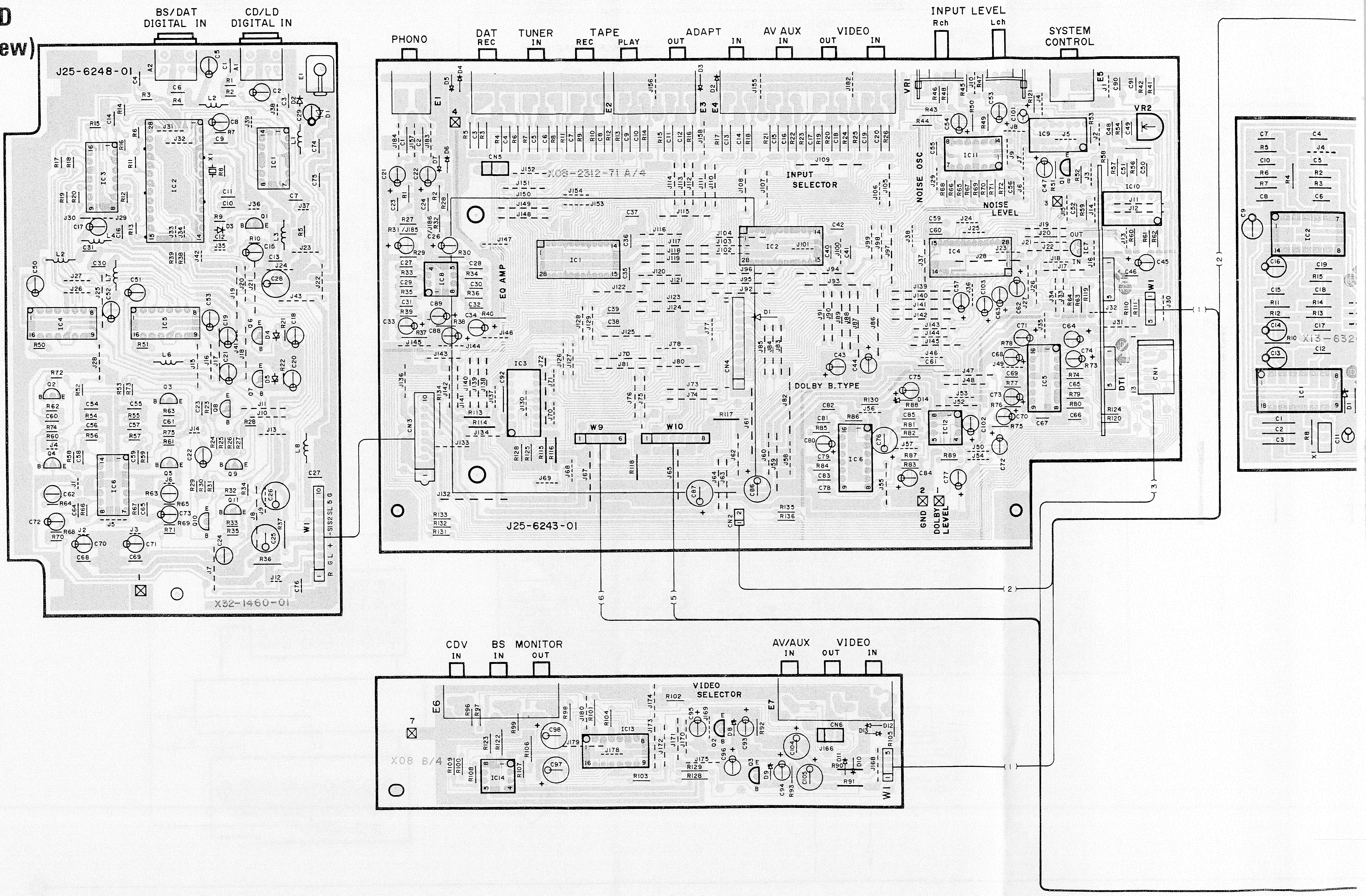
(Fo

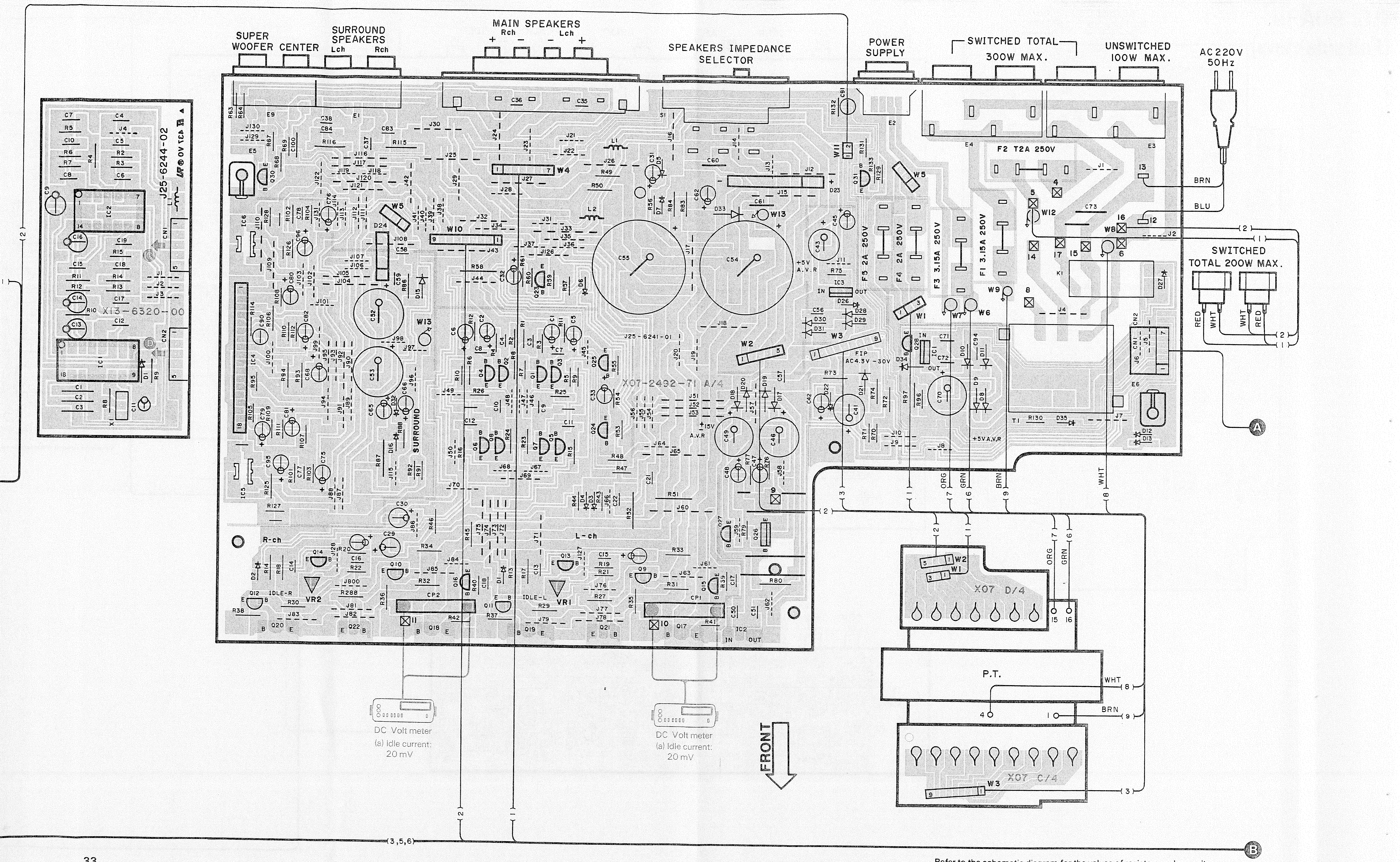

J25-6244-02
X13-6320-00
IC2
CN1
CN2
IC1
L1
X1


SYSTEM CONTROL
INPUT LEVEL
Lch
Rch
VIDEO
IN
OUT
AV AUX
IN
ADAPT
IN
OUT
TAPE
PLAY
REC
TUNER
IN
DAT
REC
PHONO
CD/LD DIGITAL IN
BS/DAT DIGITAL IN
NOISE OSC
NOISE LEVEL
INPUT SELECTOR
EQ AMP
DOLBY B TYPE
DOLBY LEVEL
GND
X08-2312-71 A/4
X32-1460-01
VIDEO
IN
OUT
AV/AUX
IN
MONITOR BS
OUT
IN
CDV
IN
VIDEO SELECTOR
X08 B/4
W10
W9
W1
CN1
CN2
CN3
CN4
CN5
CN6
(1)
(2)
(3)
(5)
(6)
IC1
IC2
IC3
IC4
IC5
IC6
IC8
IC9
IC10
IC11
IC12
IC13
IC14
VR1
VR2
E1
E2
E3
E4
E5
E6
E7
DT1
X1
5320-00

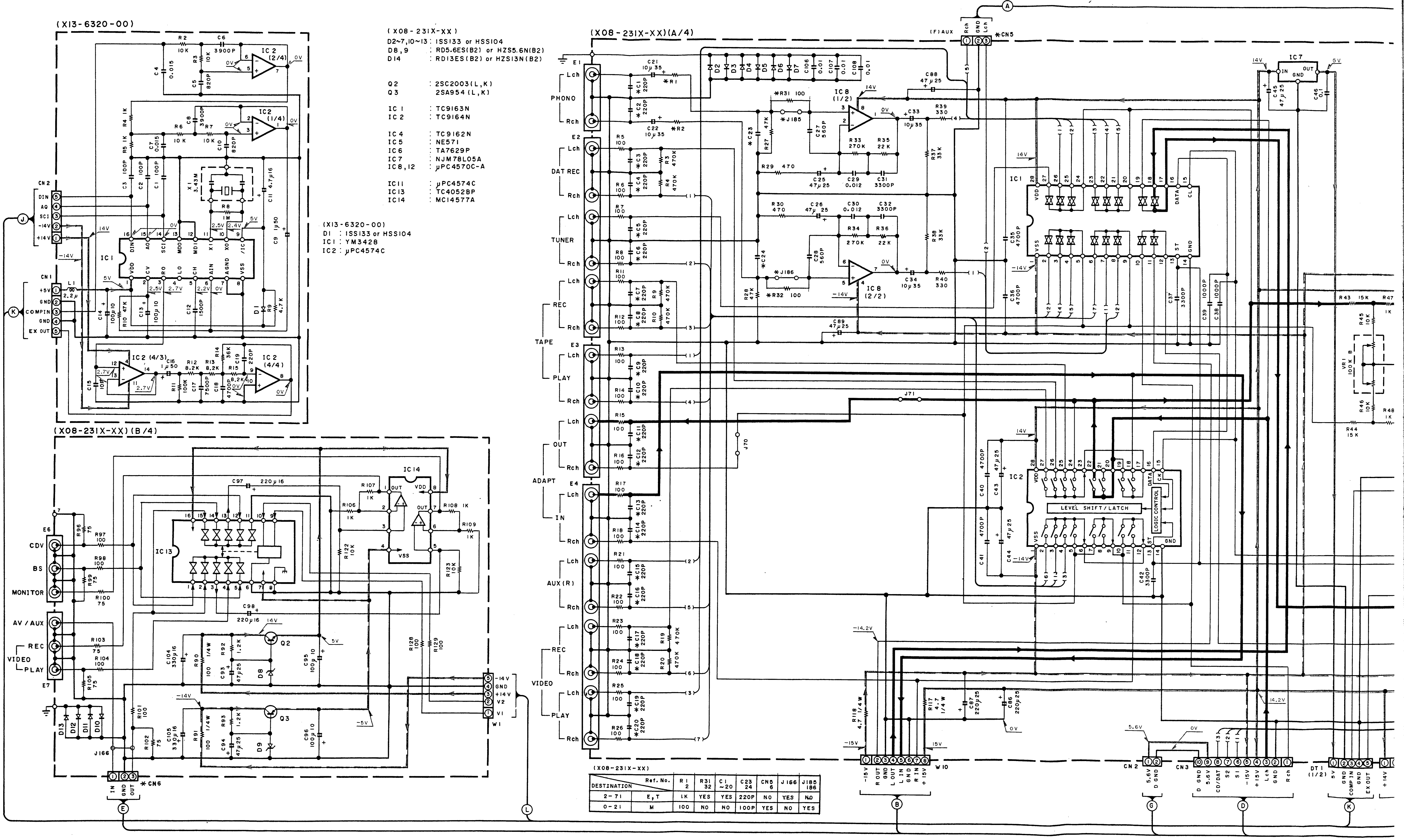
Refer to the schematic diagram for the values of resistors and capacitors.

P.C. BOARD
Foil side view)


BS/DAT DIGITAL IN
CD/LD DIGITAL IN
J25-6248-01
X32-1460-01
PHONO
DAT REC
TUNER IN
TAPE REC PLAY
ADAPT OUT IN
AV AUX IN
VIDEO OUT IN
INPUT LEVEL Rch Lch
SYSTEM CONTROL
VR1
VR2
INPUT SELECTOR
NOISE OSC
NOISE LEVEL
EQ AMP
DOLBY B.TYPE
X08-2312-71 A/4
J25-6243-01
GND
DOLBY LEVEL
W9
W10
CN1
CN2
CN3
CN4
CN5
DT1
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
CDV IN
BS IN
MONITOR OUT
AV/AUX IN
VIDEO OUT IN
VIDEO SELECTOR
E6
E7
IC13
IC14
CN6
X08 B/4
W1
X13-632


SUPER WOOFER
CENTER
SURROUND SPEAKERS
Lch
Rch
MAIN SPEAKERS
Rch
Lch
+
−
SPEAKERS IMPEDANCE SELECTOR
POWER SUPPLY
SWITCHED TOTAL 300W MAX.
UNSWITCHED 100W MAX.
AC220V 50Hz
SWITCHED TOTAL 200W MAX.
F2 T2A 250V
F1 3.15A 250V
F3 3.15A 250V
F4 2A 250V
F5 2A 250V
J25-6244-02
X13-6320-00
J25-6241-01
X07-2492-71 A/4
X07 D/4
X07 C/4
P.T.
+5V A.V.R
+15V A.V.R
+5V A.V.R
FIP AC4.3V -30V
SURROUND
R-ch
L-ch
IDLE-R
IDLE-L
VR1
VR2
CP1
CP2
BRN
BLU
RED
WHT
ORG
GRN
FRONT
DC Volt meter
(a) Idle current: 20 mV
DC Volt meter
(a) Idle current: 20 mV
(3,5,6)
A
B

Refer to the schematic diagram for the values of resistors and capacitors.


(X13-6320-00)
(X08-231X-XX)(B/4)
(X08-231X-XX)(A/4)
IC1
IC2 (2/4)
IC2 (1/4)
IC2 (4/3)
IC2 (4/4)
X1 3.43M
CN1
CN2
DIN
AQ
SCI
-14V
+14V
+5V
GND
COMPIN
EX OUT
IC13
IC14
Q2
Q3
D8
D9
E6
CDV
BS
MONITOR
AV / AUX
VIDEO
REC
PLAY
E7
J166
*CN6
IN
GND
OUT
W1
-14V
+14V
V2
V1
-5V
5V
PHONO
DAT REC
TUNER
TAPE
ADAPT
OUT
IN
AUX(R)
VIDEO
Lch
Rch
E1
E2
E3
E4
IC8 (1/2)
IC8 (2/2)
J70
J71
(F)AUX
*CN5
IC7
IN
OUT
GND
LEVEL SHIFT/LATCH
LOGIC CONTROL
DATA
CL
ST
VDD
VSS
VR1 100K B
W10
R OUT
GND
L OUT
L IN
R IN
+15V
-15V
-14.2V
14.2V
CN2
5.6V
D GND
CN3
CD/DAT
S2
S1
DT1 (1/2)
COMP IN
EX OUT
A
B
D
E
G
J
K
L

(X08-231X-XX)
D2~7,10~13 : 1SS133 or HSS104
D8,9 : RD5.6ES(B2) or HZS5.6N(B2)
D14 : RD13ES(B2) or HZS13N(B2)

Q2 : 2SC2003(L,K)
Q3 : 2SA954(L,K)

IC1 : TC9163N
IC2 : TC9164N

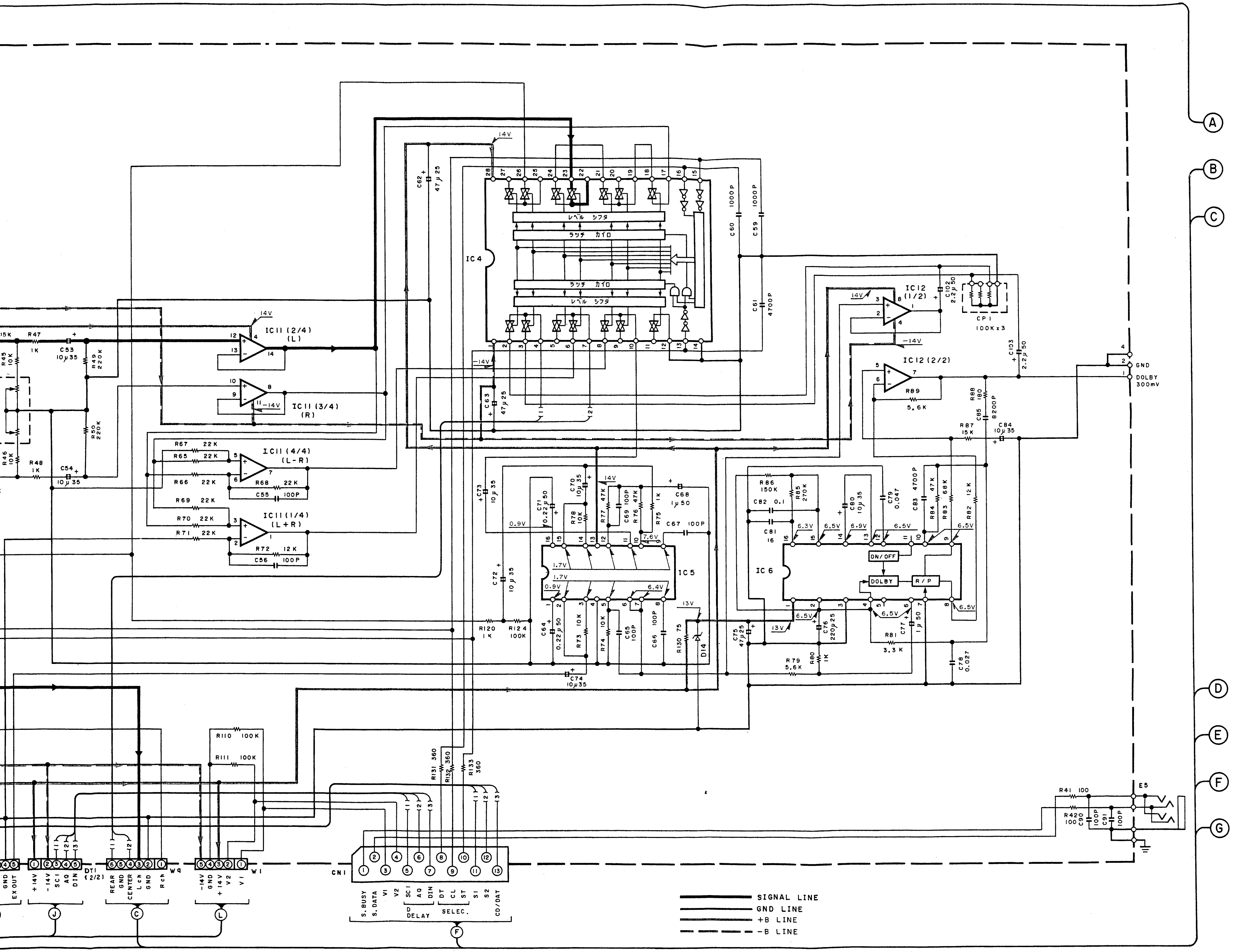
IC4 : TC9162N
IC5 : NE571
IC6 : TA7629P
IC7 : NJM78L05A
IC8,12 : µPC4570C-A

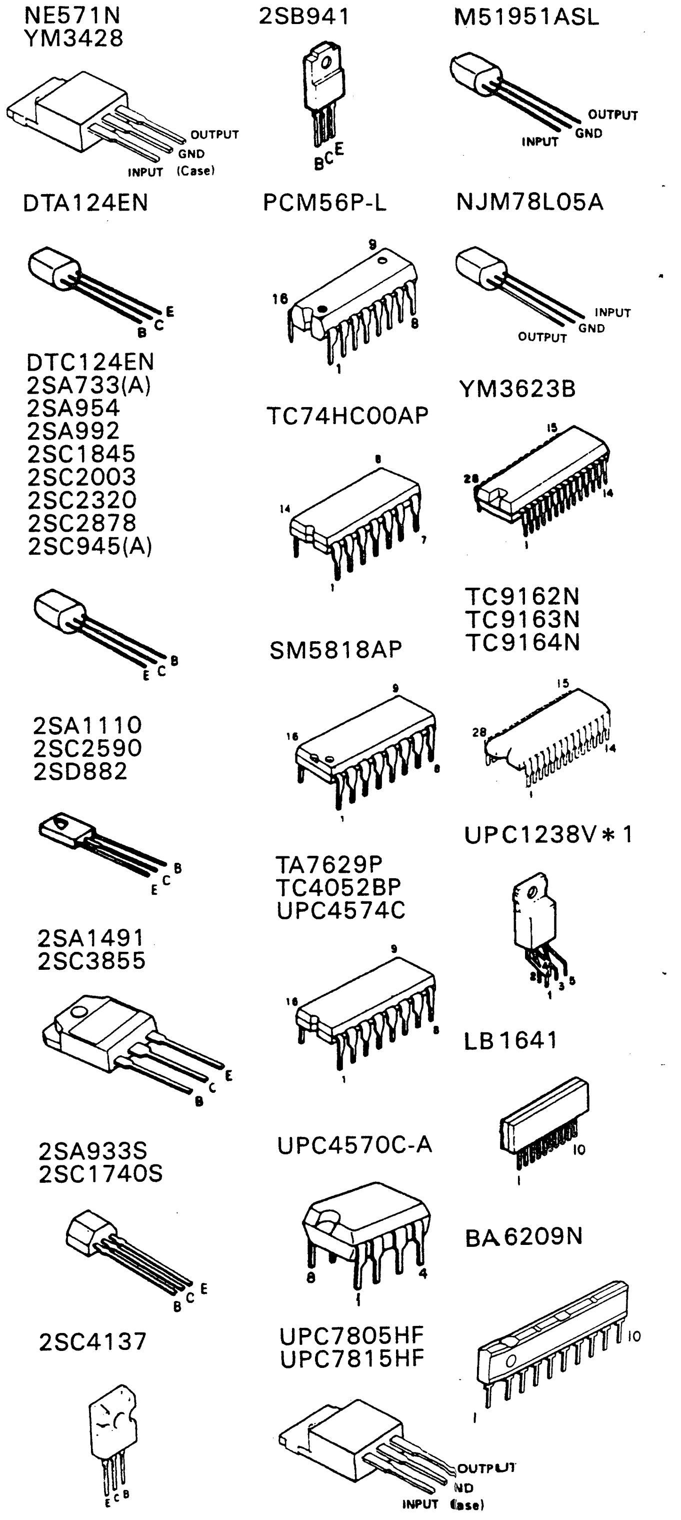
IC11 : µPC4574C
IC13 : TC4052BP
IC14 : MC14577A

(X13-6320-00)
D1 : 1SS133 or HSS104
IC1 : YM3428
IC2 : µPC4574C

(X08-231X-XX)

DESTINATION	Ref. No.	R1 2	R31 32	C1 ~20	C23 24	CN5 6	J166	J185 186
2-71	E, T	1K	YES	YES	220P	NO	YES	NO
0-21	M	100	NO	NO	100P	YES	NO	YES


IC4
IC5
IC6
IC11 (2/4) (L)
IC11 (3/4) (R)
IC11 (4/4) (L-R)
IC11 (1/4) (L+R)
IC12 (1/2)
IC12 (2/2)
CP1 100K x3
レベル シフタ
ラッチ カイロ
ON/OFF
DOLBY
R/P
D14
GND
DOLBY 300mV
E5
CN1
S.BUSY
S.DATA
V1
V2
SC1
AQ
DIN
DT
CL
ST
S1
S2
CD/DAT
DELAY
SELEC.
DT1 (2/2)
W1
W4
GND
EX OUT
+14V
-14V
REAR
CENTER
Lch
Rch
A
B
C
D
E
F
G
J
L
SIGNAL LINE
GND LINE
+B LINE
-B LINE


NE571N
YM3428
OUTPUT
GND
INPUT (Case)
2SB941
M51951ASL
DTA124EN
PCM56P-L
NJM78L05A
DTC124EN
2SA733(A)
2SA954
2SA992
2SC1845
2SC2003
2SC2320
2SC2878
2SC945(A)
TC74HC00AP
YM3623B
TC9162N
TC9163N
TC9164N
SM5818AP
2SA1110
2SC2590
2SD882
UPC1238V*1
TA7629P
TC4052BP
UPC4574C
2SA1491
2SC3855
LB1641
2SA933S
2SC1740S
UPC4570C-A
BA6209N
2SC4137
UPC7805HF
UPC7815HF
B
C
E

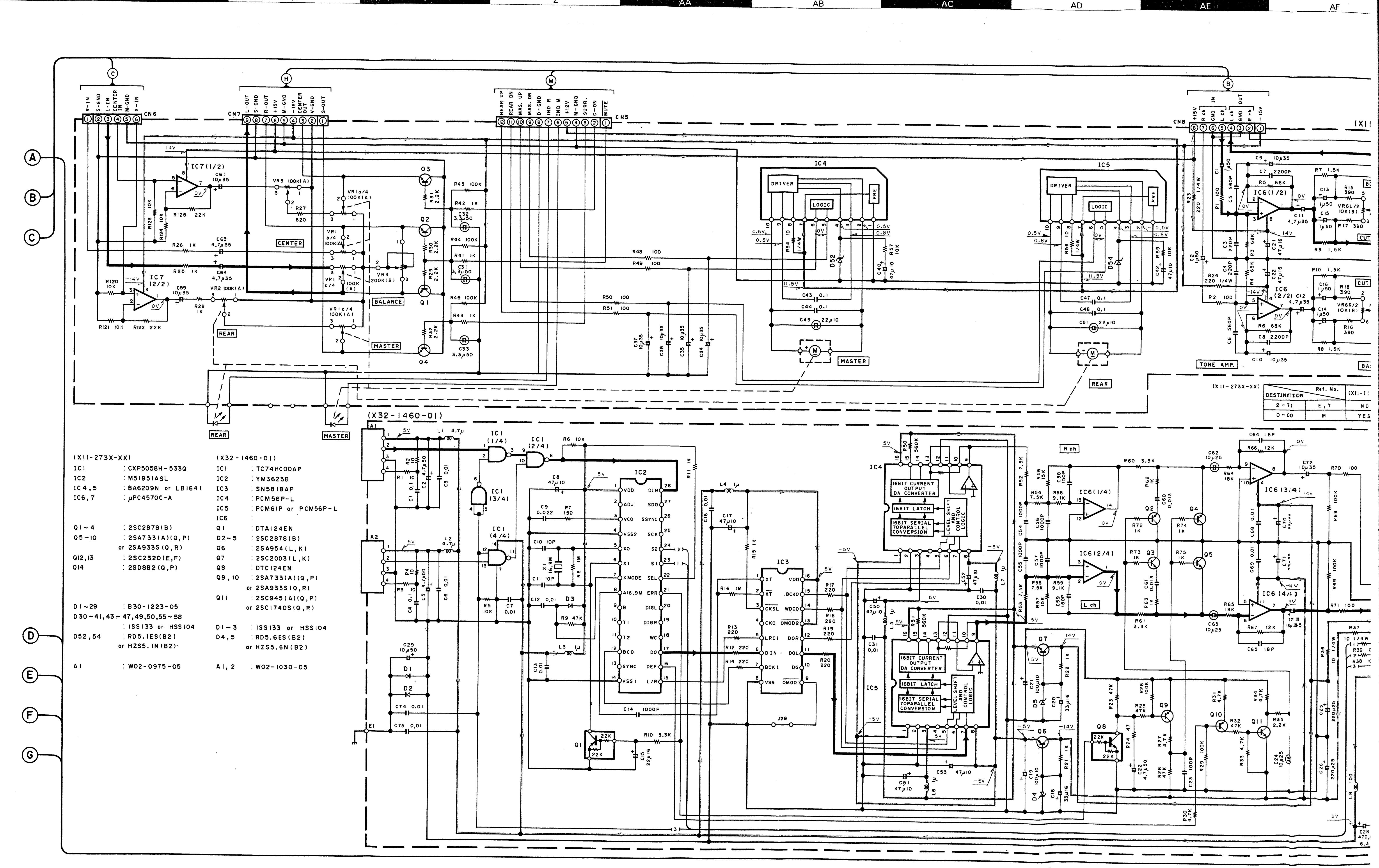
- DC voltages are measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.
- Les tensions c.c. doivent être measurées avec un voltmètre à haute impédance. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.
- Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Voltmeter gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u. U. geringfügig.

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

A-93

KENWOOD

Y08-3810-21

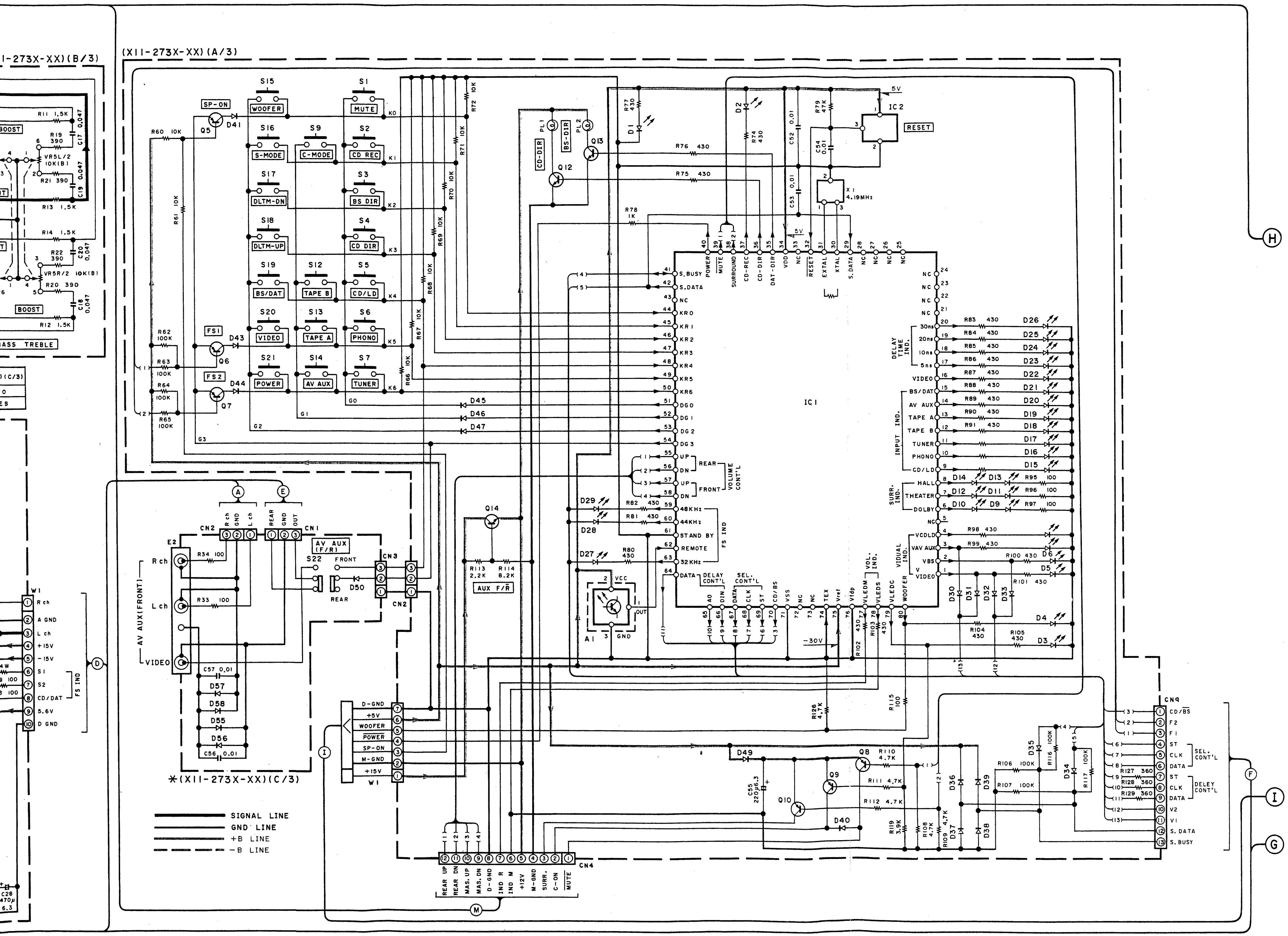

Z
AA
AB
AC
AD
AE
AF
A
B
C
D
E
F
G
H
M
CN6
R-IN
S-GND
L-IN
CENTER IN
M-GND
S-IN
CN7
L-OUT
S-GND
R-OUT
+15V
M-GND
-15V
CENTER OUT
V-GND
S-OUT
CN5
REAR UP
REAR DN
MAS. UP
MAS. DN
D-GND
IND R
IND M
+12V
M-GND
SURR.
C-ON
MUTE
CN8
+15V
R ch
GND
IN
L ch
GND
OUT
R ch
-15V
IC7(1/2)
IC7 (2/2)
Q1
Q2
Q3
Q4
VR1a/4 100K(A)
VR1 b/4 100K(A)
VR1 c/4 100K (A)
VR1d/4 100K(A)
VR2 100K(A)
VR3 100K(A)
VR4 200K(B)
CENTER
BALANCE
MASTER
REAR
IC4
IC5
DRIVER
LOGIC
PRE
D52
D54
IC6(1/2)
IC6 (2/2)
TONE AMP.
VR6L/2 10K(B)
VR6R/2 10K(B)
CUT
BA
(X11
(X32-1460-01)
A1
A2
E1
IC1 (1/4)
IC1 (2/4)
IC1 (3/4)
IC1 (4/4)
IC2
IC3
16BIT CURRENT OUTPUT DA CONVERTER
16BIT LATCH
16BIT SERIAL TOPARALLEL CONVERSION
LEVEL SHIFT AND CONTROL LOGIC
R ch
L ch
IC6(1/4)
IC6(2/4)
IC6 (3/4)
IC6 (4/4)
Q5
Q6
Q7
Q8
Q9
Q10
Q11
D1
D2
D3
D4
D5
X1 16.9M
J29
VDD
ADJ
VCO
VSS2
XO
XI
KMODE
A16.9M
BCO
SYNC
VSS1
DIN
SDO
SSYNC
SCK
S2
S1
SEL
ERR
DIGL
DIGR
WC
DO
DEF
L/R
XT
CKSL
CKO
LRCI
BCKI
VSS
BCKO
WDCO
OMOD2
DOR
DOL
DG
OMOD1
5V
-5V
14V
-14V
0V
0.5V
0.8V
11.5V

(X11-273X-XX)	
IC1	: CXP5058H-533Q
IC2	: M51951ASL
IC4,5	: BA6209N or LB1641
IC6,7	: µPC4570C-A
Q1~4	: 2SC2878(B)
Q5~10	: 2SA733(A)(Q,P) or 2SA933S(Q,R)
Q12,13	: 2SC2320(E,F)
Q14	: 2SD882(Q,P)
D1~29	: B30-1223-05
D30~41,43~47,49,50,55~58	: 1SS133 or HSS104
D52,54	: RD5.1ES(B2) or HZS5.1N(B2)
A1	: W02-0975-05

(X32-1460-01)	
IC1	: TC74HC00AP
IC2	: YM3623B
IC3	: SN5818AP
IC4	: PCM56P-L
IC5	: PCM61P or PCM56P-L
IC6	:
Q1	: DTA124EN
Q2~5	: 2SC2878(B)
Q6	: 2SA954(L,K)
Q7	: 2SC2003(L,K)
Q8	: DTC124EN
Q9,10	: 2SA733(A)(Q,P) or 2SA933S(Q,R)
Q11	: 2SC945(A)(Q,P) or 2SC1740S(Q,R)
D1~3	: 1SS133 or HSS104
D4,5	: RD5.6ES(B2) or HZS5.6N(B2)
A1,2	: W02-1030-05

(X11-273X-XX)

DESTINATION / Ref. No.		(X11-)(
2-71	E,T	NO
0-00	M	YES


(X11-273X-XX)(A/3)
I-273X-XX)(B/3)
*(X11-273X-XX)(C/3)
IC1
IC2
RESET
X1 4.19MHz
S15 WOOFER
S1 MUTE
S16 S-MODE
S9 C-MODE
S2 CD REC
S17 DLTM-DN
S3 BS DIR
S18 DLTM-UP
S4 CD DIR
S19 BS/DAT
S12 TAPE B
S5 CD/LD
S20 VIDEO
S13 TAPE A
S6 PHONO
S21 POWER
S14 AV AUX
S7 TUNER
SP-ON
FS1
FS2
CD-DIR
BS-DIR
PL1
PL2
Q5
Q6
Q7
Q8
Q9
Q10
Q12
Q13
Q14
D41
D43
D44
D45
D46
D47
A1
CN1
CN2
CN3
CN4
CN9
W1
E2
S22
D50
AUX F/R
AV AUX (F/R)
AV AUX (FRONT)
Rch
Lch
VIDEO
FRONT
REAR
S.BUSY
S.DATA
POWER
MUTE
SURROUND
CD-REC
CD-DIR
DAT-DIR
VDD
RESET
EXTAL
XTAL
DELAY TIME IND.
INPUT IND.
SURR. IND.
VIDUAL IND.
VOL. IND.
REAR VOLUME CONT'L
FRONT
FS IND
48KHz
44KHz
STAND BY
REMOTE
32KHz
DELAY CONT'L
SEL. CONT'L
SEL. CONT'L
DELEY CONT'L
CD/BS
ST
CLK
DATA
V2
V1
S. DATA
S. BUSY
D-GND
+5V
WOOFER
POWER
SP-ON
M-GND
+15V
REAR UP
REAR DN
MAS. UP
MAS. DN
D-GND
IND R
IND M
+12V
M-GND
SURR.
C-ON
MUTE
SIGNAL LINE
GND LINE
+B LINE
−B LINE
BOOST
BASS TREBLE
-30V

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

- DC voltages are measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.
- Les tensions c.c. doivent être measurées avec un voltmètre à haute impédance. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.
- Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Voltmeter gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u. U. geringfügig.

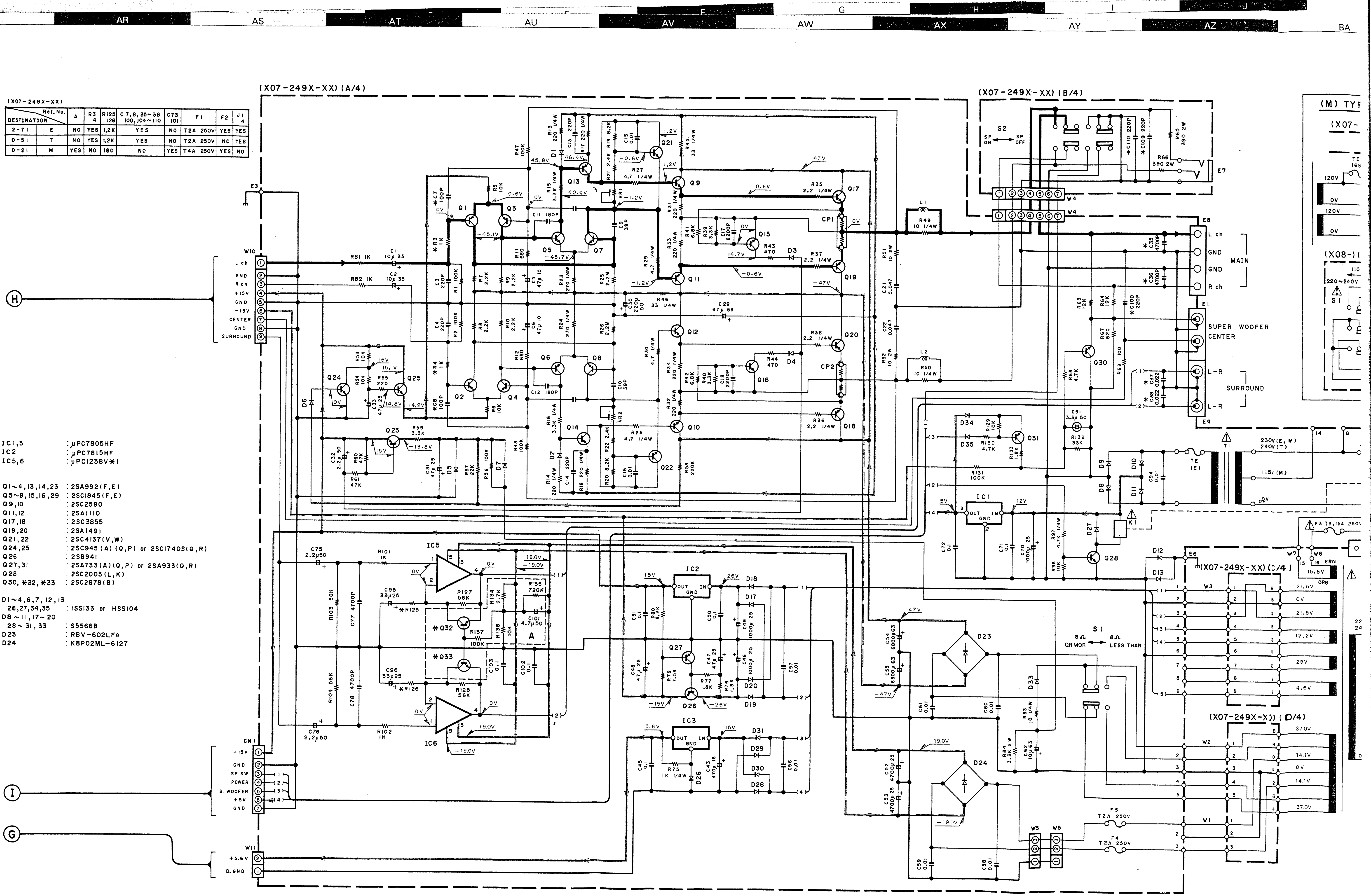
Y08-3810-21

A-93

KENWOOD

(X07-249X-XX)

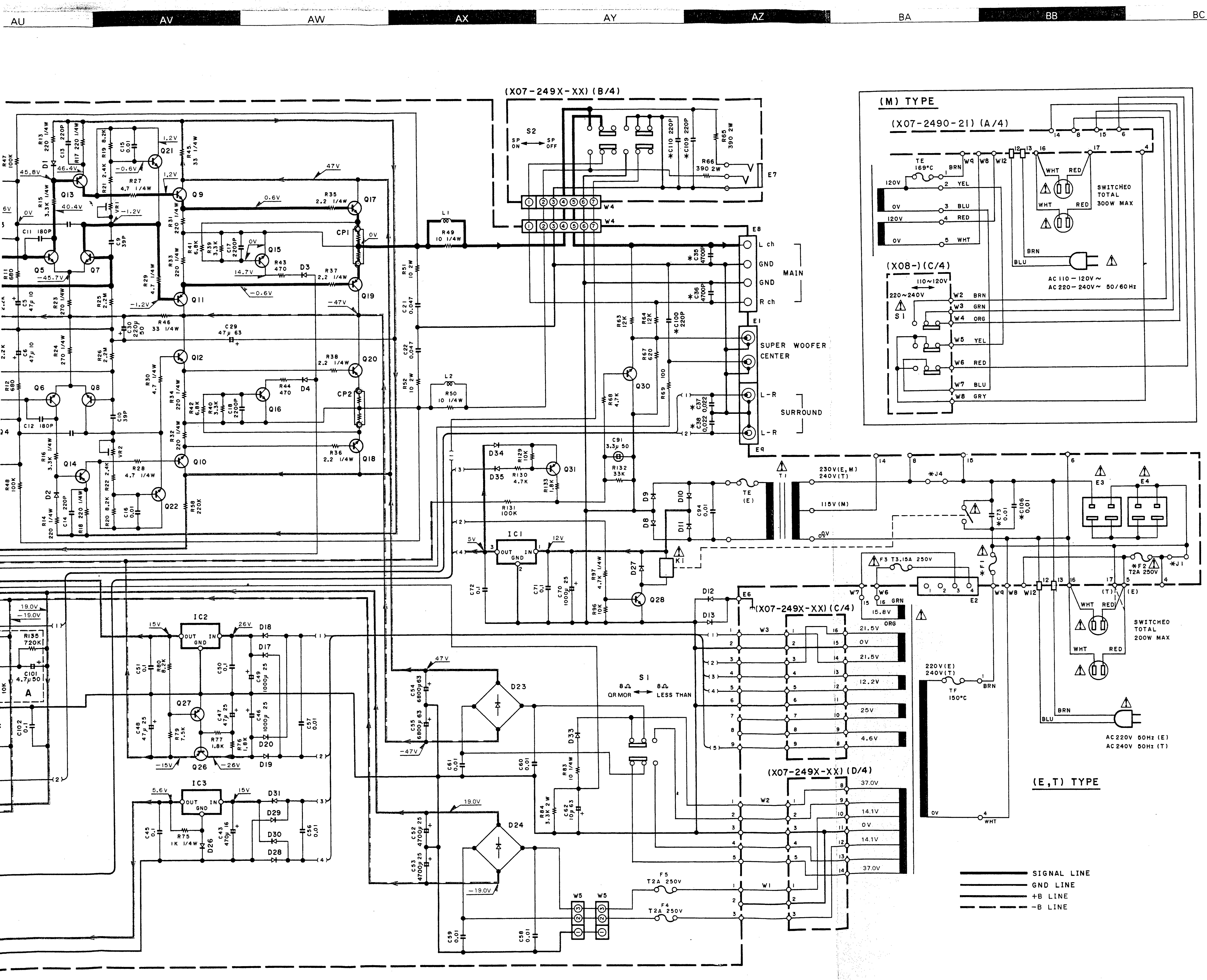
Ref. No. / DESTINATION		A	R3 4	R125 126	C 7,8, 35~38 100, 104~110	C73 101	F1	F2	J1 4
2-71	E	NO	YES	1.2K	YES	NO	T2A 250V	YES	YES
0-51	T	NO	YES	1.2K	YES	NO	T2A 250V	NO	YES
0-21	M	YES	NO	180	NO	YES	T4A 250V	YES	NO


AQ
AR
AS
AT
AU
AV
AW
AX
AY
AZ
BA
F
G
H
I
J
(X07-249X-XX) (A/4)
(X07-249X-XX) (B/4)
(X07-249X-XX) (C/4)
(X07-249X-XX) (D/4)
(M) TYP
(X08-)
W10
L ch
GND
R ch
+15V
GND
-15V
CENTER
GND
SURROUND
H
I
G
CN1
+15V
GND
SP SW
POWER
S. WOOFER
+5V
GND
W11
+5.6V
D.GND
E3
E7
E8
E1
E6
E9
L ch
GND
GND
R ch
MAIN
SUPER WOOFER
CENTER
L-R
L-R
SURROUND
S2
SP ON
SP OFF
W4
W3
W2
W1
W5
W6
W7
IC1
IC2
IC3
IC5
IC6
Q1
Q3
Q5
Q7
Q9
Q11
Q13
Q15
Q17
Q19
Q21
Q2
Q4
Q6
Q8
Q10
Q12
Q14
Q16
Q18
Q20
Q22
Q23
Q24
Q25
Q26
Q27
Q28
Q30
Q31
*Q32
*Q33
CP1
CP2
L1
L2
VR1
VR2
D23
D24
S1
8Ω OR MOR
8Ω LESS THAN
T1
230V(E, M)
240V(T)
115V(M)
0V
120V
TE (E)
K1
F3 T3.15A 250V
F4 T2A 250V
F5 T2A 250V
220~240V
A
47V
-47V
15V
-15V
26V
-26V
19.0V
-19.0V
5.6V
12V
5V
21.5V
12.2V
25V
4.6V
37.0V
14.1V
15.8V
GRN
ORG

IC1,3 : μPC7805HF
IC2 : μPC7815HF
IC5,6 : μPC1238V*1

Q1~4, 13, 14, 23 : 2SA992(F,E)
Q5~8, 15, 16, 29 : 2SC1845(F,E)
Q9,10 : 2SC2590
Q11,12 : 2SA1110
Q17,18 : 2SC3855
Q19,20 : 2SA1491
Q21,22 : 2SC4137(V,W)
Q24,25 : 2SC945(A)(Q,P) or 2SC1740S(Q,R)
Q26 : 2SB941
Q27,31 : 2SA733(A)(Q,P) or 2SA933(Q,R)
Q28 : 2SC2003(L,K)
Q30, *32, *33 : 2SC2878(B)

D1~4, 6, 7, 12, 13
26, 27, 34, 35 : 1SS133 or HSS104
D8~11, 17~20
28~31, 33 : S5566B
D23 : RBV-602LFA
D24 : KBP02ML-6127


AU
AV
AW
AX
AY
AZ
BA
BB
BC
BD
BE
(X07-249X-XX) (B/4)
S2
SP ON
SP OFF
(M) TYPE
(X07-2490-21) (A/4)
(X08-) (C/4)
110~120V
220~240V
SWITCHED TOTAL 300W MAX
AC 110 – 120V ~
AC 220 – 240V ~ 50/60Hz
MAIN
L ch
GND
GND
R ch
SUPER WOOFER
CENTER
L-R
SURROUND
230V(E,M)
240V(T)
115V(M)
(X07-249X-XX) (C/4)
(X07-249X-XX) (D/4)
S1
8Ω OR MOR
8Ω LESS THAN
F3 T3.15A 250V
F5 T2A 250V
F4 T2A 250V
SWITCHED TOTAL 200W MAX
220V(E)
240V(T)
AC220V 50Hz (E)
AC240V 50Hz (T)
(E,T) TYPE
IC1
IC2
IC3
SIGNAL LINE
GND LINE
+B LINE
–B LINE

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

- DC voltages are measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.
- Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.
- Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Voltmeter gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u. U. geringfügig.

Y08-3810-21

A-93

KENWOOD

PARTS LIST

⁎ New Parts
Parts without Parts No. are not supplied.
Les articles non mentionnes dans le Parts No. ne sont pas fournis.
Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
A-93						
1	1A	*	A01-1810-01	METALLIC CABINET		
2	2A	*	A20-5874-12	PANEL ASSY	M	
2	2A	*	A20-5930-12	PANEL ASSY	TE	
5	1A	*	A70-0299-05	REMOTE CONTROLLER ASSY		
6	1A	*	A09-0088-08	BATTERY CASE		
			B09-0068-05	CAP		
9	2A	*	B03-2575-04	DRESSING PLATE		
10	2A	*	B03-2576-04	DRESSING PLATE		
11	2A	*	B10-1034-03	FRONT GLASS		
12	2A	*	B12-0129-04	INDICATOR		
-			B46-0122-13	WARRANTY CARD	E	
-			B46-0143-03	WARRANTY CARD	T	
-		*	B50-9806-00	INSTRUCTION MANUAL		
-		*	B50-9807-00	INSTRUCTION MANUAL	ME	
-		*	B50-9808-00	INSTRUCTION MANUAL	E	
-		*	B50-9809-00	INSTRUCTION MANUAL	E	
-		*	B50-9810-00	INSTRUCTION MANUAL	M	
-		*	B52-0331-00	CONNECTING DIAGRAM		
-			B58-0803-13	CAUTION CARD	E	
⚠ 20	1C		E03-0055-05	AC OUTLET	ME	
⚠ 20	1C		E03-0085-05	AC OUTLET	T	
23	1A		E30-0615-05	AUDIO CORD		
24	1A		E30-1392-05	CORD WITH PLUG		
⚠ 25	1C		E30-0459-05	AC POWER CORD	ME	
⚠ 25	1C		E30-1416-05	AC POWER CORD	T	
26	1A	*	E31-7189-05	LEAD WIRE		
-		*	H01-8609-04	ITEM CARTON CASE		
-		*	H10-3872-02	POLYSTYRENE FOAMED FIXTURE		
-		*	H10-3873-02	POLYSTYRENE FOAMED FIXTURE		
-			H25-0181-04	PROTECTION BAG (150X260X0.05)		
-			H25-0224-04	PROTECTION BAG (800X400X0.03)		
-			H25-0232-04	PROTECTION BAG (235X350X0.03)		
38	2C		J02-0366-15	FOOT		
39	2C		J02-1040-05	FOOT		
40	2B		J12-0091-05	PIN		
⚠ 42	1C		J42-0083-05	POWER CORD BUSHING		
-			J61-0307-05	WIRE BAND		
46	2A		K27-1914-04	KNOB (BUTTON) SPEAKERS		
47	2B		K27-1915-04	KNOB (BUTTON) AV AUX	M	
48	2A		K29-3742-04	KNOB BS/DAT CD/LD		
51	2A	*	K29-3759-04	KNOB BASS TREBLE BALANCE		
52	2A	*	K29-3739-04	KNOB MASTER REAR		
53	2A	*	K29-3741-04	KNOB CENTER		
55	1B	*	L01-8822-05	POWER TRANSFORMER	E	
55	1B	*	L01-8825-05	POWER TRANSFORMER	M	
55	1B	*	L01-8827-05	POWER TRANSFORMER	T	
59	1C		N08-0128-35	BINDING POST		
A	2B		N30-3006-46	PAN HEAD MACHINE SCREW		
B	2B		N87-3006-46	BRAZIER HEAD TAPTITE SCREW		
C	1A, 1C		N89-3008-45	BINDING HEAD TAPTITE SCREW		
D	1B, 1C		N89-3008-46	BINDING HEAD TAPTITE SCREW		

E: Scandinavia & Europe K: USA P: Canada
U: PX(Far East, Hawaii) T: England M: Other Areas
UE : AAFES(Europe) X: Australia

⚠ indicates safety critical components.

PARTS LIST

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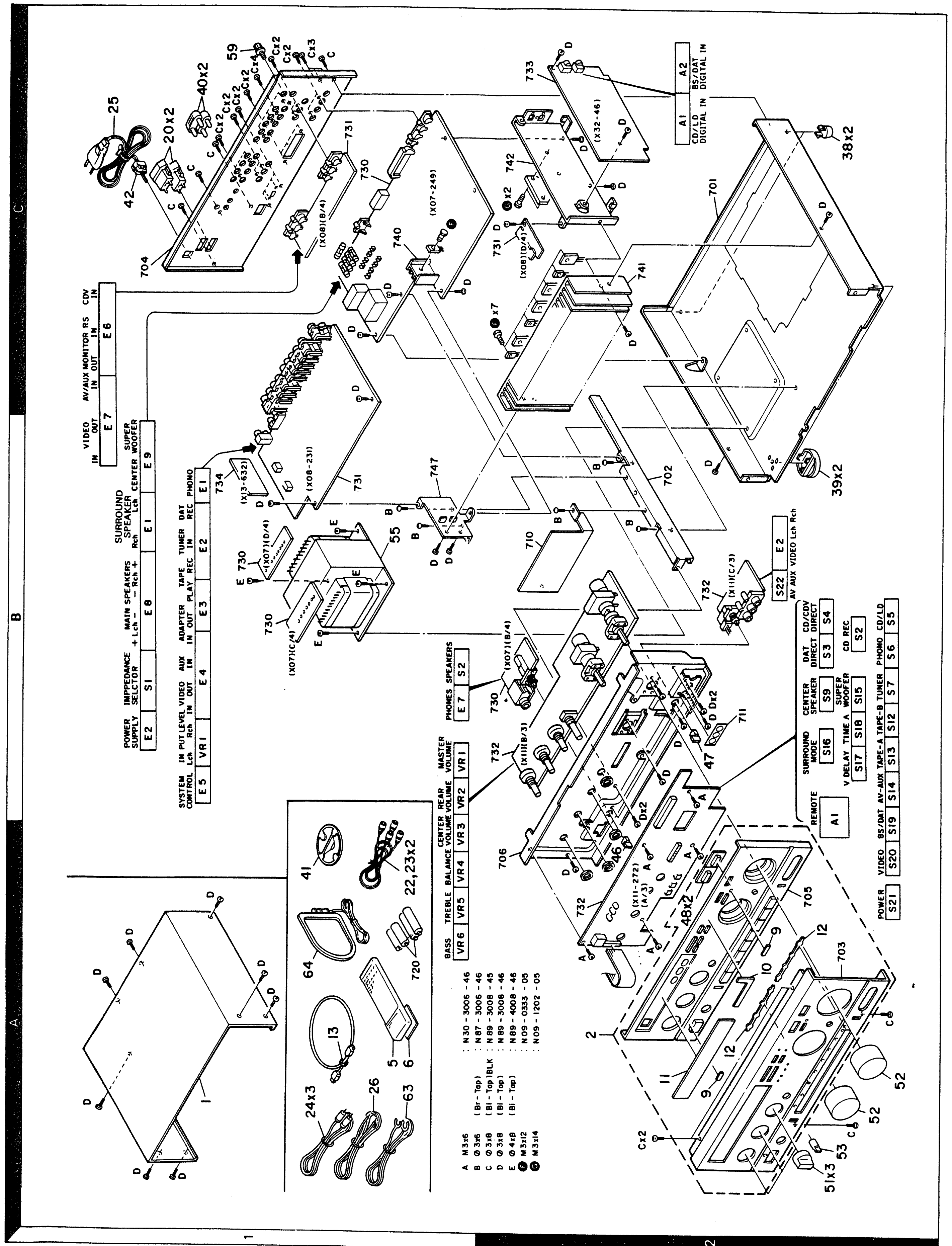
Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
E	1B		N89-4008-46	BINDING HEAD TAPTITE SCREW		
MAIN AMPLIFIER UNIT (X07-2490-00)						
C1 ,2			CE04KW1V100M	ELECTRO 10UF 35WV		
C3 ,4			CC45FSL1H221J	CERAMIC 220PF J		
C5 ,6			CE04KW1A470M	ELECTRO 47UF 10WV		
C7 ,8			CC45FSL1H101J	CERAMIC 100PF J	TE	
C9 ,10			CC45FSL1H390J	CERAMIC 39PF J		
C11 ,12			CC45FSL1H181J	CERAMIC 180PF J		
C13 ,14			CC45FSL1H221J	CERAMIC 220PF J		
C15 ,16			CK45FF1H103Z	CERAMIC 0.010UF Z		
C17 ,18			CF92FV1H222J	MF 2200PF J		
C21 ,22			CF92FV1H473J	MF 0.047UF J		
C29 ,30			CE04KW1J470M	ELECTRO 47UF 63WV		
C31			CE04KW1E470M	ELECTRO 47UF 25WV		
C32			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		
C33			CE04KW1E470M	ELECTRO 47UF 25WV		
C35 ,36			CF92FV1H472J	MF 4700PF J	TE	
C37 ,38			CF92FV1H222J	MF 2200PF J	TE	
C43			CE04KW1C471M	ELECTRO 470UF 16WV		
C45			CF92FV1H104J	MF 0.10UF J		
C46			CE04KW1E102M	ELECTRO 1000UF 25WV		
C47 ,48			CE04KW1E470M	ELECTRO 47UF 25WV		
C49			CE04KW1E102M	ELECTRO 1000UF 25WV		
C50 ,51			CF92FV1H104J	MF 0.10UF J		
C52 ,53			CE04KW1E222M	ELECTRO 2200UF 25WV		
C54 ,55		*	C90-1785-05	ELECTRO 6800UF 63WV		
C56 -59			CK45FF1H103Z	CERAMIC 0.010UF Z		
C60 ,61			CK45FE2H103P	CERAMIC 0.010UF P		
C62			CE04KW1J100M	ELECTRO 10UF 63WV		
C70			CE04KW1E102M	ELECTRO 1000UF 25WV		
C71 ,72			CF92FV1H104J	MF 0.10UF J		
⚠ C73			C91-0647-05	CERAMIC 0.01UF P	TE	
⚠ C73			C91-0971-05	FILM 0.01UF 250WV	M	
C75 ,76			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		
C77 ,78			CF92FV1H472J	MF 4700PF J		
C83 ,84			CF92FV1H224J	MF 0.22UF J		
C91			C90-1351-05	NP-ELEC 3.3UF 50WV		
C94			CK45FF1H103Z	CERAMIC 0.010UF Z		
C95 ,96			CE04KW1E330M	ELECTRO 33UF 25WV		
C100			C91-0749-05	CERAMIC 220PF K	TE	
E1			E13-0254-05	PHONO JACK (2P)		
E2			E08-0411-05	RECTANGULAR RECEPTACLE		
E7			E11-0162-05	PHONE JACK (3P)		
E8			E20-0459-05	LOCK TERMINAL BOARD		
E9			E13-0255-05	PHONO JACK (2P)		
⚠ 70			F05-3121-05	FUSE (SEMKO) (250V T3.15A)		
⚠ 71			F06-2021-05	FUSE (SEMKO) (250V T2A)		
73	1C		J13-0054-05	FUSE CLIP		
L1 ,2			L39-0085-05	PHASE-COMPENSATION COIL		
⚠ T1			L01-7652-05	POWER TRANSFORMER	E	
T1			L01-7653-05	POWER TRANSFORMER	M	
⚠ T1			L01-7657-05	POWER TRANSFORMER	T	

E: Scandinavia & Europe K: USA P: Canada
U: PX(Far East, Hawaii) T: England M: Other Areas
UE : AAFES(Europe) X: Australia

⚠ indicates safety critical components.

EXPLODED VIEW


1
2
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6
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11
12
13
20,23x2
22,23x2
24x3
25
26
38x2
39x2
40x2
41
42
46
47
48x2
51x3
52
53
55
59
63
64
701
702
703
704
705
706
710
711
720
730
731
732
733
734
740
741
742
747
(X07-249)
(X08-231)
(X13-632)
(X32-46)
(X11-272)
A
B
C
D
E
A N30-3006-46
B N87-3006-46
C N89-3008-45
D N89-3008-46
E N89-4008-46
F N09-0333-05
G N09-1202-05
A M3x6
B Ø3x6 (Br-Tap)
C Ø3x8 (Bl-Tap)BLK
D Ø3x8 (Bl-Tap)
E Ø4x8 (Bl-Tap)
F M3x12
G M3x14
POWER SUPPLY E2
SYSTEM CONTROL E5
IMPPEDANCE SELCTOR S1
IN PUT LEVEL Lch Rch VR1
MAIN SPEAKERS +Lch− −Rch+ E8
VIDEO OUT IN E4
AUX IN E3
ADAPTER PLAY REC E3
TAPE IN PLAY REC E2
TUNER IN E2
DAT REC E1
PHONO E1
SURROUND SPEAKER Lch Rch E1
CENTER E9
SUPER WOOFER E9
VIDEO IN OUT E7
AV/AUX MONITOR IN OUT E6
RS IN
CDV
A1 CD/LD DIGITAL IN
A2 BS/DAT DIGITAL IN
PHONES E7
SPEAKERS S2
MASTER VOLUME VR1
REAR VOLUME VR2
CENTER VOLUME VR3
BALANCE VR4
TREBLE VR5
BASS VR6
REMOTE A1
SURROUND MODE S16
V DELAY TIME A S17
CENTER SPEAKER S9
SUPER WOOFER S15
DAT DIRECT S3
CD/CDV DIRECT S4
CD REC S2
TAPE-A S18
TAPE-B S12
AV-AUX S13
BS/DAT S14
VIDEO S19
POWER S20
TUNER S7
PHONO S6
CD/LD S5
AV AUX VIDEO Lch Rch E2
S22
S21
A
B
C
1
2

Parts with the exploded numbers larger than 700 are not supplied.

PARTS LIST

✻ New Parts

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Les articles non mentionnes dans le Parts No. ne sont pas fournis.

Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
			A-93			
1	1A	✻	A01-1810-01	METALLIC CABINET		
2	2A	✻	A20-5874-12	PANEL ASSY	M	
2	2A	✻	A20-5930-12	PANEL ASSY	TE	
5	1A	✻	A70-0299-05	REMOTE CONTROLLER ASSY		
6	1A	✻	A09-0088-08	BATTERY CASE		
			B09-0068-05	CAP		
9	2A	✻	B03-2575-04	DRESSING PLATE		
10	2A	✻	B03-2576-04	DRESSING PLATE		
11	2A	✻	B10-1034-03	FRONT GLASS		
12	2A	✻	B12-0129-04	INDICATOR		
-			B46-0122-13	WARRANTY CARD	E	
-			B46-0143-03	WARRANTY CARD	T	
-		✻	B50-9806-00	INSTRUCTION MANUAL		
-		✻	B50-9807-00	INSTRUCTION MANUAL	ME	
-		✻	B50-9808-00	INSTRUCTION MANUAL	E	
-		✻	B50-9809-00	INSTRUCTION MANUAL	E	
-		✻	B50-9810-00	INSTRUCTION MANUAL	M	
-		✻	B52-0331-00	CONNECTING DIAGRAM		
-			B58-0803-13	CAUTION CARD	E	
⚠ 20	1C		E03-0055-05	AC OUTLET	ME	
⚠ 20	1C		E03-0085-05	AC OUTLET	T	
23	1A		E30-0615-05	AUDIO CORD		
24	1A		E30-1392-05	CORD WITH PLUG		
⚠ 25	1C		E30-0459-05	AC POWER CORD	ME	
⚠ 25	1C		E30-1416-05	AC POWER CORD	T	
26	1A	✻	E31-7189-05	LEAD WIRE		
-		✻	H01-8609-04	ITEM CARTON CASE		
-		✻	H10-3872-02	POLYSTYRENE FOAMED FIXTURE		
-		✻	H10-3873-02	POLYSTYRENE FOAMED FIXTURE		
-			H25-0181-04	PROTECTION BAG (150X260X0.05)		
-			H25-0224-04	PROTECTION BAG (800X400X0.03)		
-			H25-0232-04	PROTECTION BAG (235X350X0.03)		
38	2C		J02-0366-15	FOOT		
39	2C		J02-1040-05	FOOT		
40	2B		J12-0091-05	PIN		
⚠ 42	1C		J42-0083-05	POWER CORD BUSHING		
-			J61-0307-05	WIRE BAND		
46	2A		K27-1914-04	KNOB (BUTTON) SPEAKERS		
47	2B		K27-1915-04	KNOB (BUTTON) AV AUX	M	
48	2A		K29-3742-04	KNOB BS/DAT CD/LD		
51	2A	✻	K29-3759-04	KNOB BASS TREBLE BALANCE		
52	2A	✻	K29-3739-04	KNOB MASTER REAR		
53	2A	✻	K29-3741-04	KNOB CENTER		
55	1B	✻	L01-8822-05	POWER TRANSFORMER	E	
55	1B	✻	L01-8825-05	POWER TRANSFORMER	M	
55	1B	✻	L01-8827-05	POWER TRANSFORMER	T	
59	1C		N08-0128-35	BINDING POST		
A	2B		N30-3006-46	PAN HEAD MACHINE SCREW		
B	2B		N87-3006-46	BRAZIER HEAD TAPTITE SCREW		
C	1A, 1C		N89-3008-45	BINDING HEAD TAPTITE SCREW		
D	1B, 1C		N89-3008-46	BINDING HEAD TAPTITE SCREW		

E: Scandinavia & Europe K: USA P: Canada

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PARTS LIST

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
C			N89-3008-45	BINDING HEAD TAPTITE SCREW		
D			N89-3008-46	BINDING HEAD TAPTITE SCREW		
F	2C		N09-0333-05	TAPPING SCREW (3X12)		
H			N35-3008-45	BINDING HEAD MACHINE SCREW		
CP1 ,2			R90-0187-05	MULTI-COMP 0.22X2 K 5W		
R13 ,14			RD14AB2E221J	FL-PROOF RD 220 J 1/4W		
R15 ,16			RD14AB2E332J	FL-PROOF RD 3.3K J 1/4W		
R17 ,18			RD14AB2E221J	FL-PROOF RD 220 J 1/4W		
R23 ,24			RD14AB2E271J	FL-PROOF RD 270 J 1/4W		
R27 -30			RD14AB2E4R7J	FL-PROOF RD 4.7 J 1/4W		
R31 -34			RD14AB2E221J	FL-PROOF RD 220 J 1/4W		
R35 -38			RD14AB2E2R2J	FL-PROOF RD 2.2 J 1/4W		
R45 ,46			RD14AB2E330J	FL-PROOF RD 33 J 1/4W		
R49 ,50			RD14AB2E100J	FL-PROOF RD 10 J 1/4W		
R51 ,52			RS14DB3D100J	FL-PROOF RS 10 J 2W		
R65 ,66			RS14DB3D391J	FL-PROOF RS 390 J 2W		
R75			RD14AB2E102J	FL-PROOF RD 1.0K J 1/4W		
R83			RD14AB2E100J	FL-PROOF RD 10 J 1/4W		
R84			RS14DB3D332J	FL-PROOF RS 3.3K J 2W		
R97			RD14AB2E471J	FL-PROOF RD 470 J 1/4W		
R115,116			RS14DB3A2R7J	FL-PROOF RS 2.7 J 1W		
VR1 ,2			R12-1083-05	TRIMMING POT.(1K)		
K1			S51-1052-05	MAGNETIC RELAY		
S1			S31-2136-05	SLIDE SWITCH (POWER TYPE)		
S2			S40-4056-05	PUSH SWITCH		
D1 -7			HSS104A	DIODE		
D1 -7			1SS131	DIODE		
D8 -11			S5566B	DIODE		
D12 ,13			HSS104	DIODE		
D12 ,13			1SS133	DIODE		
D17 -20			S5566B	DIODE		
D23			RBV-602LFA	DIODE		
D24			KBP02ML-6127	DIODE		
D26			HSS104	DIODE		
D26			1SS133	DIODE		
D27			HSS104A	DIODE		
D27			1SS131	DIODE		
D28 -31			S5566B	DIODE		
D33			S5566B	DIODE		
D34 ,35			HSS104	DIODE		
D34 ,35			1SS133	DIODE		
IC1			UPC7805HF	IC(VOLTAGE REGULATOR/ +5V)		
IC2			UPC7815HF	IC(VOLTAGE REGULATOR/ +15V)		
IC3			UPC7805HF	IC(VOLTAGE REGULATOR/ +5V)		
IC5 ,6			UPC1238V*1	IC(POWER AMP)		
Q1 -4			2SA992(F,E)	TRANSISTOR		
Q5 -8			2SC1845(F,E)	TRANSISTOR		
Q9 ,10			2SC2590	TRANSISTOR		
Q11 ,12			2SA1110	TRANSISTOR		
Q13 ,14			2SA992(F,E)	TRANSISTOR		
Q15 ,16			2SC1845(F,E)	TRANSISTOR		
Q17 ,18			2SC3855	TRANSISTOR		
Q19 ,20			2SA1491	TRANSISTOR		
Q21 ,22			2SC4137(V,W)	TRANSISTOR		

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Q23			2SA992(F,E)	TRANSISTOR		
Q24 ,25			2SC1740S(Q,R)	TRANSISTOR		
Q24 ,25			2SC945(A)(Q,P)	TRANSISTOR		
Q26			2SB941	TRANSISTOR		
Q27			2SA733(A)(Q,P)	TRANSISTOR		
Q27			2SA933S(Q,R)	TRANSISTOR		
Q28			2SC2003(L,K)	TRANSISTOR		
Q30			2SC2878(B)	TRANSISTOR		
Q31			2SA733(A)(Q,P)	TRANSISTOR		
Q31			2SA933S(Q,R)	TRANSISTOR		
EQ FILTER UNIT (X08-2310-00)						
C1 -20			C91-0749-05	CERAMIC 220PF K	TE	
C21 ,22			CE04KW1V100M	ELECTRO 10UF 35WV		
C23 ,24			CC45FSL1H101J	CERAMIC 100PF J	M	
C23 ,24			CC45FSL1H221J	CERAMIC 220PF J	TE	
C25 ,26			CE04KW1E470M	ELECTRO 47UF 25WV		
C27 ,28			CK45FB1H561K	CERAMIC 560PF K		
C29 ,30			CF92FV1H123J	MF 0.012UF J		
C31 ,32			CF92FV1H332J	MF 3300PF J		
C33 ,34			CE04KW1V100M	ELECTRO 10UF 35WV		
C35 ,36			CK45FF1H472Z	CERAMIC 4700PF Z		
C37			CK45FB1H332K	CERAMIC 3300PF K		
C38 ,39			CK45FB1H102K	CERAMIC 1000PF K		
C40 ,41			CK45FF1H472Z	CERAMIC 4700PF Z		
C42			CK45FB1H332K	CERAMIC 3300PF K		
C43 -45			CE04KW1E470M	ELECTRO 47UF 25WV		
C46			CF92FV1H104J	MF 0.10UF J		
C53 ,54			CE04KW1V100M	ELECTRO 10UF 35WV		
C55 ,56.			CC45FSL1H101J	CERAMIC 100PF J		
C57			CE04KW1V100M	ELECTRO 10UF 35WV		
C59 ,60			CK45FB1H102K	CERAMIC 1000PF K		
C61			C91-0765-05	CERAMIC 4700PF M		
C62 ,63			CE04KW1E470M	ELECTRO 47UF 25WV		
C64			CE04KW1HR22M	ELECTRO 0.22UF 50WV		
C65 -67			CC45FSL1H101J	CERAMIC 100PF J		
C68			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C69			CC45FSL1H101J	CERAMIC 100PF J		
C70			CE04KW1V100M	ELECTRO 10UF 35WV		
C71			CE04KW1HR22M	ELECTRO 0.22UF 50WV		
C72 -74			CE04KW1V100M	ELECTRO 10UF 35WV		
C75			CE04KW1E470M	ELECTRO 47UF 25WV		
C76			CE04KW1E221M	ELECTRO 220UF 25WV		
C77			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C78			CF92FV1H273J	MF 0.027UF J		
C79			CF92FV1H473J	MF 0.047UF J		
C80			CE04KW1V100M	ELECTRO 10UF 35WV		
C81			CF92FV1H334J	MF 0.33UF J		
C82			CF92FV1H104J	MF 0.10UF J		
C83			CF92FV1H472J	MF 4700PF J		
C84			CE04KW1V100M	ELECTRO 10UF 35WV		
C85			CF92FV1H822J	MF 8200PF J		
C86 ,87			CE04KW1E221M	ELECTRO 220UF 25WV		
C88 ,89			CE04KW1E470M	ELECTRO 47UF 25WV		
C90 ,91			CC45FSL1H101J	CERAMIC 100PF J		
C93 ,94			CE04KW1E470M	ELECTRO 47UF 25WV		

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C95 ,96			CE04KW1A101M	ELECTRO 100UF 10WV		
C97 ,98			CE04KW1C221M	ELECTRO 220UF 16WV		
C102			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		
C103			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		
C104,105			CE04KW1C331M	ELECTRO 330UF 16WV		
C106,107			CK45FF1H103Z	CERAMIC 0.010UF Z		
C108			C91-0769-05	CERAMIC 0.01UF M		
C110			C91-0085-05	CERAMIC 0.022UF N	TE	
E1			E13-0235-05	PHONO JACK (2P) PHONO		
E2			E13-0621-05	PHONO JACK (6P) DAT,TUNER,REC		
E3			E13-0446-05	PHONO JACK (4P) PLAY,OUT		
E4			E13-0820-05	PHONO JACK (8P) IN,AUX,VIDEO		
E5			E11-0188-05	PHONO JACK SYSTEM CONTROL		
E6			E13-0309-05	PHONO JACK (3P) MONITOR		
E7			E13-0313-05	PHONE JACK (3P)		
CP1		*	R90-0850-05	MULTIPLE RESISTOR		
R90 ,91			RD14GB2E101J	FL-PROOF RD 100 J 1/4W		
R117,118			RD14GB2E4R7J	FL-PROOF RD 4.7 J 1/4W		
VR1			R29-5019-05	POTENTIOMETER		
⚠ S1			S31-3010-05	SLIDE SWITCH	M	
D2 -7			HSS104	DIODE		
D2 -7			1SS133	DIODE		
D8 ,9			HZS5.6N(B2)	ZENER DIODE		
D8 ,9			RD5.6ES(B2)	ZENER DIODE		
D10 -13			HSS104	DIODE		
D10 -13			1SS133	DIODE		
D14			HZS13N(B2)	ZENER DIODE		
D14			RD13ES(B2)	ZENER DIODE		
IC1			TC9163N	IC(BILATERAL SWITCH X16)		
IC2			TC9164N	IC(16CH BILATERAL SELECTOR SW)		
IC4			TC9162N	IC(ANALOG SWITCH ARRAY)		
IC5			NE571N	IC		
IC6			TA7629P	IC(DOLBY B NOISE REDUCTION)		
IC7			NJM78L05A	IC(VOLTAGE REGULATOR/ +5V)		
IC8			UPC4570C-A	IC(OP AMP X2)		
IC11			UPC4574C	IC(OP AMP X4)		
IC12			UPC4570C-A	IC(OP AMP X2)		
IC13			TC4052BP	IC(4CH MPX/DE-MPX)		
IC14			MC14577A	IC		
Q2			2SC2003(L,K)	TRANSISTOR		
Q3			2SA954(L,K)	TRANSISTOR		
CONTROL UNIT (X11-2730-00)						
D1 -29			B30-1223-05	LED(LN21CPH(V)-C)		
PL1 ,2			B30-1260-05	LAMP		
C1 ,2			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C3 ,4			CC45FSL1H221J	CERAMIC 220PF J		
C5 ,6			CK45FB1H561K	CERAMIC 560PF K		
C7 ,8			CF92FV1H222J	MF 2200PF J		
C9 ,10			CE04KW1V100M	ELECTRO 10UF 35WV		
C11 ,12			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		
C13 -16			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C17 -20			CF92FV1H473J	MF 0.047UF J		

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C21 ,22			CE04KW1C470M	ELECTRO 47UF 16WV		
C31			C90-1351-05	NP-ELEC 3.3UF 50WV		
C32			C90-1455-05	NP-ELEC 0.1UF 50WV		
C33			C90-1351-05	NP-ELEC 3.3UF 50WV		
C34 -37			CE04KW1V100M	ELECTRO 10UF 35WV		
C40			CE04KW1A470M	ELECTRO 47UF 10WV		
C42			CE04KW1A470M	ELECTRO 47UF 10WV		
C43 ,44			CF92FV1H104J	MF 0.10UF J		
C47 ,48			CF92FV1H104J	MF 0.10UF J		
C49			C90-1333-05	NP-ELEC 22UF 10WV		
C51			C90-1333-05	NP-ELEC 22UF 10WV		
C52 ,53			C91-0769-05	CERAMIC 0.01UF M		
C54			CK45FF1H103Z	CERAMIC 0.010UF Z		
C55			CE04JW0J221M	ELECTRO 220UF 6.3WV		
C56 ,57			CK45FF1H103Z	CERAMIC 0.010UF Z	M	
C59			CE04KW1V100M	ELECTRO 10UF 35WV		
C61			CE04KW1V100M	ELECTRO 10UF 35WV		
C63 ,64			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		
-		*	E13-0311-05	PHONO JACK	M	
X1			L78-0209-05	RESONATOR (4.194MHZ)		
X1			L78-0218-05	RESONATOR		
A			N30-3006-46	PAN HEAD MACHINE SCREW	M	
D			N89-3008-46	BINDING HEAD TAPTITE SCREW		
VR1		*	R29-5030-05	POTENTIOMETER		
VR2		*	R29-5034-05	POTENTIOMETER		
VR3		*	R05-5031-05	POTENTIOMETER(100K)		
VR4		*	R01-5070-05	POTENTIOMETER		
VR5 ,6		*	R06-3065-05	POTENTIOMETER		
S1 -7			S40-1064-05	PUSH SWITCH		
S9			S40-1064-05	PUSH SWITCH		
S12 -21			S40-1064-05	PUSH SWITCH		
S22			S40-2371-05	PUSH SWITCH	M	
D30 -41			HSS104	DIODE		
D30 -41			1SS133	DIODE		
D43 -47			HSS104	DIODE		
D43 -47			1SS133	DIODE		
D49			HSS104	DIODE	TE	
D49			1SS133	DIODE	TE	
D49 ,50			HSS104	DIODE	M	
D49 ,50			1SS133	DIODE	M	
D52			HZS5.1N(B2)	ZENER DIODE		
D52			RD5.1ES(B2)	ZENER DIODE		
D54			HZS5.1N(B2)	ZENER DIODE		
D54			RD5.1ES(B2)	ZENER DIODE		
D55 -58			HSS104	DIODE	M	
D55 -58			1SS133	DIODE	M	
IC1			CXP5058H-544Q	IC		
IC2			M51951ASL	IC(SYSTEM RESET)		
IC4 ,5			BA6209N	IC(MOTOR DRIVER)		
IC4 ,5			LB1641	IC(MOTOR DRIVER)		
IC6 ,7			UPC4570C-A	IC(OP AMP X2)		
Q1 -4			2SC2878(B)	TRANSISTOR		

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Q5 -10			2SA733(A)(Q,P)	TRANSISTOR		
Q5 -10			2SA933S(Q,R)	TRANSISTOR		
Q12 ,13			2SC2320(E,F)	TRANSISTOR		
Q14			2SD882(Q,P)	TRANSISTOR		
A1			W02-0975-05	ELECTRIC CIRCUIT MODULE		
ACCESSORY UNIT (X13-6320-00)						
C1 -3			C91-0745-05	CERAMIC 100PF K		
C4			CF92FV1H153J	MF 0.015UF J		
C5			CK45FB1H821K	CERAMIC 820PF K		
C6			CF92FV1H392J	MF 3900PF J		
C7			CF92FV1H153J	MF 0.015UF J		
C8			CF92FV1H392J	MF 3900PF J		
C9			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C10			CK45FB1H821K	CERAMIC 820PF K		
C11			CE04JW1C4R7M	ELECTRO 4.7UF 16WV		
C12			CC93FCH1H152J	CERAMIC 1500PF J		
C13 ,14			CE04KW1A101M	ELECTRO 100UF 10WV		
C15			CC45FSL1H100D	CERAMIC 10PF D		
C16			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C17			CF92FV1H752J	MF 7500PF J		
C18			CF92FV1H472J	MF 4700PF J		
C19			CC45FSL1H221J	CERAMIC 220PF J		
L1			L40-2291-17	SMALL FIXED INDUCTOR		
X1			L78-0255-15	RESONATOR		
D1			HSS104	DIODE		
D1			1SS133	DIODE		
IC1			YM3428	IC		
IC2			UPC4574C	IC(OP AMP X4)		
SIGNAL PROSSESSING UNIT (X32-1460-00)						
C1			CF92FV1H104J	MF 0.10UF J		
C2			CE04KW1H4R7M	ELECTRO 4.7UF 50WV		
C3			CK45FF1H103Z	CERAMIC 0.010UF Z		
C4			CF92FV1H104J	MF 0.10UF J		
C5			CE04KW1H4R7M	ELECTRO 4.7UF 50WV		
C6 ,7			CK45FF1H103Z	CERAMIC 0.010UF Z		
C8			CE04KW1A470M	ELECTRO 47UF 10WV		
C9			CF92FV1H223J	MF 0.022UF J		
C10 ,11			CC45FSL1H100D	CERAMIC 10PF D		
C12			CF92FV1H103J	MF 0.010UF J		
C13			CK45FF1H103Z	CERAMIC 0.010UF Z		
C14			CK45FB1H102K	CERAMIC 1000PF K		
C15			CE04KW1C220M	ELECTRO 22UF 16WV		
C16			CK45FF1H103Z	CERAMIC 0.010UF Z		
C17			CE04KW1A470M	ELECTRO 47UF 10WV		
C18			CE04KW1C330M	ELECTRO 33UF 16WV		
C19			CE04KW1A101M	ELECTRO 100UF 10WV		
C20			CE04KW1C330M	ELECTRO 33UF 16WV		
C21			CE04KW1A101M	ELECTRO 100UF 10WV		
C22			CE04KW1H4R7M	ELECTRO 4.7UF 50WV		
C23			CC45FSL1H101J	CERAMIC 100PF J		
C24			C90-1332-05	NP-ELEC 10UF 25WV		
C25 ,26			CE04KW1E221M	ELECTRO 220UF 25WV		
C28			CE04KW0J471M	ELECTRO 470UF 6.3WV		

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C29			CE04KW1H100M	ELECTRO 10UF 50WV		
C30 ,31			CK45FF1H103Z	CERAMIC 0.010UF Z		
C50 -53			CE04KW1A470M	ELECTRO 47UF 10WV		
C54 -57			CF92FV1H102J	MF 1000PF J		
C58 ,59			CF92FV1H151K	MF 150PF K		
C60 ,61			CF92FV1H133J	MF 0.013UF J		
C62 ,63			CF92FV1H474J	MF 0.47UF J		
C64 ,65			CC45FSL1H180J	CERAMIC 18PF J		
C68 ,69			CK45FF1H103Z	CERAMIC 0.010UF Z		
C70 ,71			CE04KW1V330M	ELECTRO 33UF 35WV		
C72 ,73			CE04KW1V100M	ELECTRO 10UF 35WV		
C74 ,75			CK45FF1H103Z	CERAMIC 0.010UF Z		
L1 ,2			L40-4791-17	SMALL FIXED INDUCTOR(4.7UH,K)		
L3 -7			L40-1091-17	SMALL FIXED INDUCTOR		
L8			L40-1011-17	SMALL FIXED INDUCTOR(100UH,K)		
X1			L77-1119-05	CRYSTAL RESONATOR		
X1			L77-1164-05	CRYSTAL RESONATOR		
D1 -3			HSS104	DIODE		
D1 -3			1SS133	DIODE		
D4 ,5			HZS5.6N(B2)	ZENER DIODE		
D4 ,5			RD5.6ES(B2)	ZENER DIODE		
IC1		*	TC74HC00AP	IC(QUAD 2-INPUT NAND GATE)		
IC2			YM3623B	IC(SI-GATE)		
IC3		*	SM5818AP	IC(SIGUNAL PROCESSOR)		
IC4 ,5			PCM56P-L	IC(DA CONVERTER)		
IC6			UPC4574C	IC(OP AMP X4)		
Q1			DTA124EN	DIGITAL TRANSISTOR		
Q2 -5			2SC2878(B)	TRANSISTOR		
Q6			2SA954(L,K)	TRANSISTOR		
Q7			2SC2003(L,K)	TRANSISTOR		
Q8			DTC124EN	DIGITAL TRANSISTOR		
Q9 ,10			2SA733(A)(Q,P)	TRANSISTOR		
Q9 ,10			2SA933S(Q,R)	TRANSISTOR		
Q11			2SC1740S(Q,R)	TRANSISTOR		
Q11			2SC945(A)(Q,P)	TRANSISTOR		
A1 ,2		*	W02-1030-05	ELECTRIC CIRCUIT MODULE		

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SPECIFICATIONS

(for Europe and U.K.)

Continuous power output	
(Front)	
DIN at 1 kHz 8 Ω	70 W + 70 W
IEC/NF at 8 Ω	65 W + 65 W
(Rear)	
IEC/NF at 8 Ω	7 W + 7 W
Total harmonic distortion	
at 1/2 rated power	0.09%
Signal to noise ratio (IHF '66)	
PHONO (MM)	78 dB
CD, TUNER, AUX, TAPE	97 dB
Signal to noise ratio (DIN at 50 mW output)	
PHONO (MM)	58 dB
CD, TUNER, AUX, TAPE	60 dB
Input sensitivity/Impedance	
PHONO (MM)	2.5 mV/47 kΩ
CD, TUNER, AUX, TAPE	150 mV/47 kΩ
Frequency response	
(10 Hz to 100,000 Hz)	+0 dB, −3 dB
Tone Controls	
BASS	±10 dB (at 100 Hz)
TREBLE	±10 dB (at 10 kHz)
Output level/Impedance	
TAPE REC	150 mV/3.3 kΩ
DA converter	
Sampling frequency	32 kHz, 44.1 kHz, 48 kHz
Optical digital input	−15 dB∼−28 dBm
General	
Power consumption	180 W
Dimension	W: 360 mm H: 129 mm D: 373 mm
Weight (net)	8.1 kg

(Except for Europe and U.K.)

Continuous power output	
(Front)	
From 20 Hz to 20 kHz, 0.09% T.H.D. at 8 Ω	60 W + 60 W
Maximum useful power output (EIAJ at 8 Ω)	85 W + 85 W
(Rear)	
Maximum useful power output (EIAJ at 8 Ω)	10 W + 10 W
Total harmonic distortion	
at rated power	0.09%
Signal to noise ratio (IHF '66)	
PHONO (MM)	78 dB
CD, TUNER, AUX, TAPE	97 dB
Input sensitivity/Impedance	
PHONO (MM)	2.5 mV/47 kΩ
CD, TUNER, AUX, TAPE	150 mV/47 kΩ
Frequency response	
(10 Hz to 100,000 Hz)	+0 dB, −3 dB
Tone controls	
BASS	±10 dB (at 100 Hz)
TREBLE	±10 dB (at 10 kHz)
Output level/Impedance	
TAPE REC	150 mV/3.3 kΩ
DA converter	
Sampling frequency	32 kHz, 44.1 kHz, 48 kHz
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Note:

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Note:

Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on the Europe (E) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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